



DIGITAL CITIES CHALLENGE

Digital Transformation Strategy for the city of Iași

***Iași, a growing digital powerhouse built on
skills and entrepreneurship***

July 2019



Digital Cities Challenge

Digital Transformation Strategy for the city of Iași: Iași, a growing digital powerhouse built on skills and entrepreneurship

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Table of contents

| | |
|--|-----------|
| Executive Summary: Iași digital transformation..... | 5 |
| 1. Introduction to the Digital Cities Challenge | 9 |
| 2. Overview of the digital maturity assessment for Iași..... | 11 |
| 3. Mission and Ambition statements | 13 |
| 4. Iași, a growing digital powerhouse built on skills and entrepreneurship: the Digital Transformation Strategy | 15 |
| 4.1. Strategy orientation..... | 15 |
| 4.2. Operational objectives | 20 |
| 5. Digital strategy roadmap and planned activities..... | 24 |
| 5.1. Overview of proposed activities..... | 24 |
| 5.2. The pilot activities..... | 30 |
| 5.3. Timetable for implementation..... | 31 |
| 6. Strategy governance..... | 35 |
| 7. Monitoring and evaluation of the Digital Transformation Strategy | 37 |
| 7.1. Performance assessment framework..... | 37 |
| 7.2. Strategy evaluation plan | 38 |
| 8. Results achieved and next steps..... | 39 |
| Appendix I: Detailed presentation of activities | 42 |
| Appendix II: Performance assessment framework | 59 |
| Appendix III: Relevant Good practices | 65 |
| Appendix IV: Bibliography | 84 |
| Appendix V: Stakeholders consulted | 85 |

Executive Summary: Iași digital transformation

Iași, a central node in the Digital Cities Challenge network

The Digital Cities Challenge is an initiative of the European Commission seeking to achieve sustainable economic growth in Iași through the integration of advanced digital technologies. The initiative fosters complementarities and synergies between existing policies involving digital priorities (e.g. citizens' access to e-services, connectivity for citizens and businesses, smart parking) and the newly planned policy actions supporting digital transformation.

The ambition is that Iași will act as a model for other Romanian and European cities, by developing and testing novel policies, in a collaborative approach with the involvement of other cities. It will focus on the strengths which can be amplified and suggest how to fill the gaps which are currently hindering Iași to advance on its journey and reap the benefits of digital transformation.

The digital transformation strategy for Iași: *A growing digital powerhouse built on skills and entrepreneurship*

The mission and vision statements for the digital transformation of Iași are the main output of the process carried out during the Assessment and Vision & Ambition phases: the face-to-face meetings and workshops were followed by iterative consultations and discussions with stakeholders. Considering that this initiative is the first of its kind stemming from the local authorities in the city, the engagement of the community was very high with 41 SAT replies plus over 25 participants in the Vision and Ambition workshop and several communities. This shows the appetite for this topic and the potential to realise Iași's vision and ambitions, also complementing the existing strategies and policies from the city – and some from the wider region.

The uniqueness of Iași 's strategy is based on the commitment of both public and private bodies to achieve more value for the local communities by learning to work together more, experimenting and piloting to deliver joint outputs and communicating in a concerted manner wherever possible.

On this basis, the city of Iași has defined the following mission:

Mission statement

Iași wishes to use responsibly digital transformation to make Iași a place where people want to live, work and play. Building on skills and entrepreneurial acumen, to create an environment where businesses, citizens and authorities can interact and create more value.

In order to reach this goal, it will pursue the following **ambitions**:

- To design and execute a collaboration framework between the main driving forces (Education, Communities, Industry, Legal, Administration, and Citizen).
- To go really digital into fields such as Education and Administration as priorities, followed by Health and Infrastructure.
- To foster a regional entrepreneurship ecosystem underpinned by technology as a key added-value generator for local wealth and reason for others to invest in Iași.
- To highlight the values and potential of Iași and the reasons to come, stay and to join in.

The roll-out of this strategy will be guided by the implementation of **six operational objectives**:

- To develop a Memorandum of Understanding at city level with interested stakeholders which will then govern the “open data” framework of collaboration.
- To develop a local digital marketplace to build applications, which benefit the local economy for institutions, businesses and citizens with the possibility to be scaled.
- To invest in the development of Digital skills in all public institutions and traditional businesses.
- To foster entrepreneurial education for all group ages.
- To invest in creating a Iași Start-up & Innovation Hub, consisting of physical spaces, facilities and services for academics, creative communities, start-ups, well-established traditional industries companies, ICT clusters.
- To co-invest in creating the Central & Eastern Europe AI & Data Science flagship capability.

The strategy roadmap for the city of Iași

The city has identified the list of activities to be implemented in the short, medium and long term, in order to make its strategic mission and ambition a tangible reality. As such, a total of

16 specific activities* have been identified), and **2 pilot activities** under the different operational objectives of the strategy.

- * of which 10 with higher impact, 2 plus 4 as optional/reserve. This distinction has been driven by what is more feasible based on understanding/estimating conditions. In particular: the need to address additional management resources in the public administration, consolidating the education-related activities and transferring the best practice (e.g. digital applications) from the private sector into concrete wins for the community and city administration.

Examples of **key activities** to be implemented as part of the strategy include:

- Create the Digital Council for Digital Transformation of Iași (DGDT)
- Stimulate, promote and scale-up existing good practice
- Publish Open Data for Iași Municipality.

The ‘Design4Community’ pilot activity has been identified by the local working group as the pilot activity for immediate implementation in order to launch the implementation phase of the digital transformation strategy and start generating immediate results.

The **outline of the governance** of the digital transformation strategy has also been defined:

In the spirit of cohesion and collaborative working for the public good, the Mayor of Iași has personally endorsed the governance structure and its individual contributors.

- Ownership of the Digital Strategy belongs to a Digital Council for Digital Transformation (DCDT) Group which will be formed of local players from the public administration, civil society, academia, accelerators, businesses, and the Mayor. Their main role is to identify needs and resources.
 - For both legislative and operational reasons, the City Hall alone owns those strategies, which rely to a lesser extent on other players’ expertise and involvement.
- The Strategy Steering and Oversight will be a function of key local players from Iași sectors who form the Working Group for Digital Transformation (WGDT): the Digital Unit in the City Hall, an Academic community representative, Design4Community and Codecamp as a representative for Iași’s IT community which is also connected to the Regional Smart Specialisation Strategy (S3).

- The Strategy Implementing Agents are a mix of the Implementing Unit in the City Hall and organisations with a proven record in capacity building, managing technology and marketing projects locally. These form the Action Group for Digital Transformation (AGDT).

Some of the relevant indicators mentioned in the individual activity fiches have been reviewed, prioritised and consolidated for inclusion in the Performance Assessment Framework; their selection was guided by what was considered to be most helpful and relevant for conducting regular monitoring and appraisal of the strategy implementation.

Last but not least, the Good Practice Matrix (in Appendix III) has been designed as a guide for matching demonstrated competencies and resources relevant for Iași's operational objectives and the defined activities.

Iași is a strong city in-so-far-as it has a strong academic community, a strong IT community and also a substantial City Hall. However, there appears to be little cross-fertilisation and even communication. Therefore, a key component of the success of the DCC will be a sustained, multi-channel communication plan with the dual aims of communicating to the citizens of Iași but, perhaps even more important, bringing the key players together with mutual respect.

An tentative, outline marketing plan has been prepared. This is considered by the DCC city team as an early win towards the overall vision of cohesion, leadership and collaboration for Iași as a digital city. The plan is to be consolidated, acted upon, and developed onwards by the local owners of the digital transformation strategy.

1. Introduction to the Digital Cities Challenge

According to recent data, 72% of the EU's population lives in cities, towns and suburbs, making them the engines of the continent's economy. Cities generate 85% of Europe's GDP and they also face multiple, interconnected challenges, including energy and climate change, employment, migration, social inequality, also air, water and soil pollution.

However, through advanced digital technologies, Europe has the opportunity to re-invent the way we manage our cities' development and respond to the big societal challenges, such as efficient health management, cleaner environment, green mobility, and offering great-value jobs. Due to their high density, cities are in a very good position to create innovative ecosystems made up of a wide array of different stakeholders from government, industry, finance, academia, communitarian organisations, social partners, etc. Cities have the capacity to make policies become reality.

In this context comes the **Digital Cities Challenge**, an initiative of the European Commission with the main purpose to support the cities in their path to digital transformation. DCC offers policy advice and support to 15 cities in Europe, namely **Alcoy**, **Algeciras** and **Granada** in Spain, **Arad** and **Iasi** in Romania, **L'Aquila** in Italy, **Kavala**, **Patras** and **Thessaloniki** in Greece, **Sofia** in Bulgaria, **Ventspils** in Latvia, **Grand-Orly Seine Bièvre** in France, **Pori** in Finland, **Rijeka** in Croatia, and **Guimarães** in Portugal. The support being offered will speed up the digital transformation and the industrial modernisation of cities in order for them to take full advantage of the 4th industrial revolution.



This initiative draws inspiration from the recommendations set out in the "Blueprint for cities as launch pads for digital transformation". In addition, it will reinforce the networking among model

cities, facilitate their participation in on-going European initiatives in similar policy fields, strengthen stakeholder collaboration, cross-regional partnerships and stimulate investments.

The selected Digital Cities received support in the form of field advisory services provided by a group of high-level experts and peer reviewers and offers the possibility for city representatives to participate in a series of capacity building and networking seminars. These activities took place in four Academy seminars during which cities shared practices, took advantage of peer-to-peer learning and worked together and in thematic groups on the steps of their digital transformation trajectory.

The commitment of Mayors is key to the success of fostering economic growth, increasing prosperity as well as well-being across European cities. The engagement of political leadership will be of much value to achieving digital transformation in European cities, providing strategic orientations and ensuring that the process of developing and operationalising the strategy supporting digital transformation is translated into a portfolio of relevant actions supporting each other towards achieving a common goal and tailored to the local context. Such efforts need coordination to ensure that effort and dedication undertaken by the city administration is directed to best effect.

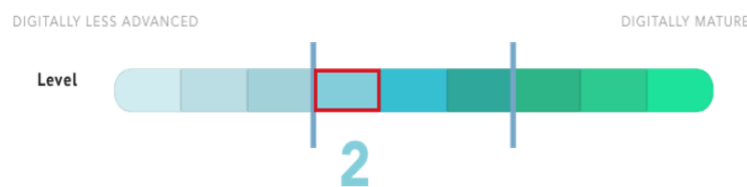
As a result of this, the Digital Cities Challenge has directly engaged with the Mayors of the supported cities. In December 2018, the Mayors' Conference was organised in Brussels to reflect upon the ongoing work and co-design the technological transformation trajectory of European cities.

This digital transformation strategy presented in this document has been developed in the framework of the field advisory services delivered in Iași. It represents the main output linked to the participation of the city in the Digital Cities Challenge. The strategy will be the main guiding document for the city to embark on its journey to unleash the power of digital transformation for growth and competitiveness.

2. Overview of the digital maturity assessment for Iași

The overall maturity score measured for Iași's digital transformation has been rated as 4 out of the 9 progression levels by stakeholders (41 participants) who took part in the Self-Assessment survey with a majority of participants from industry.

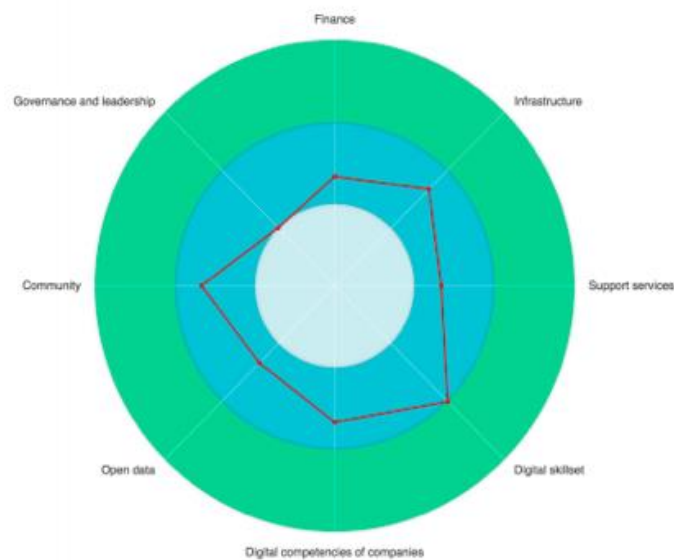
Figure 1 Average score on the SAT



Source: DCC Self-assessment Tool

This result is mainly due to the gap between the abundance of digital skills available within the young population, the peaks of private initiatives and successes for the local IT industry and the lack of local financing, overall lack of public-private coordination and leadership and the sub-optimal investment in other areas such as physical infrastructure.

Figure 2 Results per dimensions



There are peaks and a push towards excellency from the ICT business community and the education area and there needs to be more of a pull for service demand from the city itself to act as, first a testbed, and then a market for the digital products that can be produced locally. The city's role should be to coordinate interests and funnel investments for common digital and physical spaces of collaboration, and to raise awareness of the city's values in order to stop the brain drain and grow the local economy.

A separate assessment report has been produced for the city of Iași, as part of the Digital Cities Challenge.

3. Mission and Ambition statements

Mission Statement

Iași wishes to use responsibly digital transformation to make Iași a place where people want to live, work and play. Building on skills and entrepreneurial acumen, to create an environment where businesses, citizens and authorities can interact and create more value.

In order to reach this goal, Iași has defined the following ambitions:

- **To design and execute a collaboration framework between the main driving forces (Education, Communities, Industry, Legal, Administration, and Citizen).**

The rationale refers to the need for a joint effort to design and implement a transparent collaboration context in which the needs of all involved parties are well understood, expectations are managed, decisions are made and actions are performed.

- **To go really digital into priority fields such as Education and Administration, followed by Health and Infrastructure.**

The rationale here refers to the fact that the main challenges in these fields are not the lack of knowledge or technical feasibility; instead, these come from the lack of commitment, (perceived) legal impediments and lack of digital education of the involved stakeholders (which in turn become adoption-blockers) and long-term business sustainability for the service providers. Iași's strong motivation is to deploy the IT talent – which, at present, is involved mostly in providing top-quality digital transformation services for foreign markets – for the direct benefit of their own city, in a professional and proactive manner.

- **To foster a regional entrepreneurship ecosystem underpinned by technology as key added value generator for local wealth and reason for others to invest in Iași.**

The rationale relates to the need for the entire community (not only the public administration) to proactively contribute to the consolidation, growth and engagement of the highly talented technical talent in Iași in the transformation of the city. New jobs, new industrial activities with high-added value, and new city growth can be achieved through recognition of the existing abundant talent, awareness of good practice developed by the local talent for other markets and proactive local collaboration.

- **To highlight the values and potential of Iași and the reasons to come, stay and to join in.**

The target group in Iași is its very talented community who have the potential to be the engine of growth for the city. This potential also needs further recognition and support from the public administration. Overall, the rationale refers to the step-change in reviewing and communicating Iași's value proposition both internally and externally. This requires a concerted, high energy digital marketing and PR strategy based on an omni-channel approach to reach other similar contributors to the growth of Iași (students, potential investors, residents who might be attracted to other cities instead of Iași), in order to avoid them leaving the city and engage them in the transformation.

In addition, the need to capitalise on the efforts of other existing support entities such as The Regional Development Agency, the Chamber of Commerce, the Universities, IT Communities and the accelerators which are already undertaking relevant efforts to showcase the relevance of Iași in the regional context.

As a specific goal, the City administration agrees that they need to encourage, promote and support more closely both the existing successful entrepreneurial ecosystem and the talent engaged in creating value for outsourcing companies – and channel this entire energy for the benefit of its citizens and the prosperity of Iași's economy overall. Activity 1 in the Roadmap refers very specifically to this joined-up, proactive strategic marketing approach to which the City Hall and the wider stakeholders wish to commit. All parties are also aware of the need for genuine political support and engagement with the growth engine in Iași.

In summary, the city of Iași already has significant strengths in order to increase its economic growth and the quality of life for all its citizens. There are many areas that need investment, but most stakeholders recognise that the digital transformation initiative is a very significant opportunity which can add to achieving this goal.

The city would ultimately like to see the benefits of an intelligent city in action with direct impact on citizens daily lives. A city that delivers high quality public services to its citizens, offers them access to world class health facilities, ensures growing employment opportunities and enables its citizens to participate actively in the life of the community.

In this way Iași will become a digitally responsible city.

4. Iași, a growing digital powerhouse built on skills and entrepreneurship: the Digital Transformation Strategy

4.1. Strategy orientation

The digital strategy for Iași is looking to grow the current dynamic local ICT industry whilst materialising more the advantages of digital transformation for the rest of the city. It is looking to consolidate the relevant digital skills in all facets of the city life (Administration, Education, Healthcare, Industry, Communities & Citizen) and to create a good collaboration context amongst them, which matches the demand and offering of digital services and products with the goal of economic growth for all involved parties. On the demand side, there is scope for local industries (especially healthcare and public services) to be in receipt of new services, with existing examples that were created for the Automotive area. The scope mainly derives from local good practice – related to technology skills and domain-specific knowledge for the outsourced jobs: for example, design thinking and applications development in the Automotive sector can serve as basis for analogies across other sectors in Iași.

On the supply side there is more scope for local ICT growth both by directing skills towards start-up businesses as well as scaling up indigenous companies. Iași has a clear advantage due to the sheer number of technology-skilled graduates; however, at the current time, most of this talent is being used in companies specialised in outsourcing services, as opposed to creating indigenous value-added products and practices. Iași prides itself with an advanced understanding of AI and potential uses in industry but, as yet, there is no evidence of its deployment in pilots or similar; the same is true for robotics. The local ICT community believes in creating a context for collaboration supported by a framework that could cover data, IP and revenue models as well as a physical space (which may unite existing spaces) where collaboration can take place. In this way, and supported financially, the ICT community believes that this AI endeavour could grow in Iași. It is not known if these initiatives would have an impact on triggering new processes in the outsourced industries – which are primarily driven by R&D strategies established in foreign markets. One would expect that Iași's local talent would have the ability to reach out and help the indigenous developments by virtue of their extensive and in-depth up-skilling programmes as part of their day-job. This is not yet a

strategy but a natural thought amongst those who believe and promote entrepreneurial thinking in the city.

It is apparent that some local companies do have competencies in **healthcare tech** (e.g. Green Soft and RomSoft which are wholly Romanian companies, also Maxcode, CGM and CRF which are foreign investments and are also smaller). The issues they encounter are related to (a) the difficulty in selling their products internationally and (b) the public hospitals are not yet fully digitalised due to lack of funds; they also suffer from a lack of support from those who do not enjoy the prospect of digitalisation and they are also hindered by the lack of legal support i.e. Romanian law still requires some reporting by paper copies which means double effort, costs etc.

AI and robotics as competencies are work in progress for Iași. While there are international companies based in Iași such as Amazon, Continental, Veoneer (automotive); Smart2Pay (fintech) which utilise local AI competencies. Even in smaller companies (e.g. Strongbytes and the start-up ThinkOut.io) there is use of Machine Learning and there are other start-ups involved in AI developments (e.g. <https://emojer.app/>) but the real issue is that there is no strategic focus or coordination which could lead towards better adoption. The local Codecamp and NDR are flag bearers in evolving this situation to a better state also by expressing their interest in European projects such as AI SWARM <https://www.bonseyes.com/>).

It is also the intention of the newly formed Digital Council (i.e. the governance structure as a result of Iași's involvement in DCC) to reach out more and increase critical mass in awareness and involvement in all matters associated with AI.

In summary: For the reasons above, no activities other than those mentioned in this Report have been considered worth including at this stage as new experiments or similar. However, as the implementation plan progresses, the local DCC team envisage that the situation may change.

In particular, the recent conference (organised on the 22 March 2019) has created an awareness which will, hopefully, contribute to turning some of these activities from an aspirational state into successes with impact on Iași's economic growth.

Digital entrepreneurship (with focus on high scalability start-ups) represents an insufficiently stimulated and exploited driving force for the wellbeing of the city and region and represents one of the pillars of the strategy. All the good practice and progress to date (some cases also presented in appendix to this Report) need to be recognised by both the internal and external clients of Iași (local citizens & businesses, but also investors and the wider population of the

region/world) and this should be supported through education & PR programmes which heavily rely on digital technologies.

Box 1 The links to other existing strategies at the city level

The Digital Strategy for Iași is anchored in the existing regional and metropolitan area strategies which support ICT and the economic development and competitiveness. The North East region's regional development strategy 2014-2020 targets the increase in the region's competitiveness and identifies the IT sector as an area of smart specialisation. Relevant investment priorities identified in the strategy include: increasing access to ICT infrastructure, supporting innovation and competitiveness of the private sector. The vision for Iași as formulated in the Integrated Urban Development Strategy 2015-2030 is that the city should become an intelligent European metropolis, with a competitive economy and an identity built on the historical tradition, its culture and universities. The strategy's first strategic objective is to support the city's competitiveness through innovation, by supporting Iași's key domains such as ICT and the creative sector. In addition, Iași has a "Cyber City" strategy, which targets the transformation of Iași into a hub for robotics and artificial intelligence.

In addition to the strategies at City level, Iași benefits from the North-East Regional Development strategies on Smart Specialisation; the regional strategies are owned by the Regional Development Board, steered by a Regional Consortium of Innovation together with the Regional Development Agency and implemented through players in various vertical sectors, amongst which there is also ITC.

The four horizontal priorities for Regional Development are:

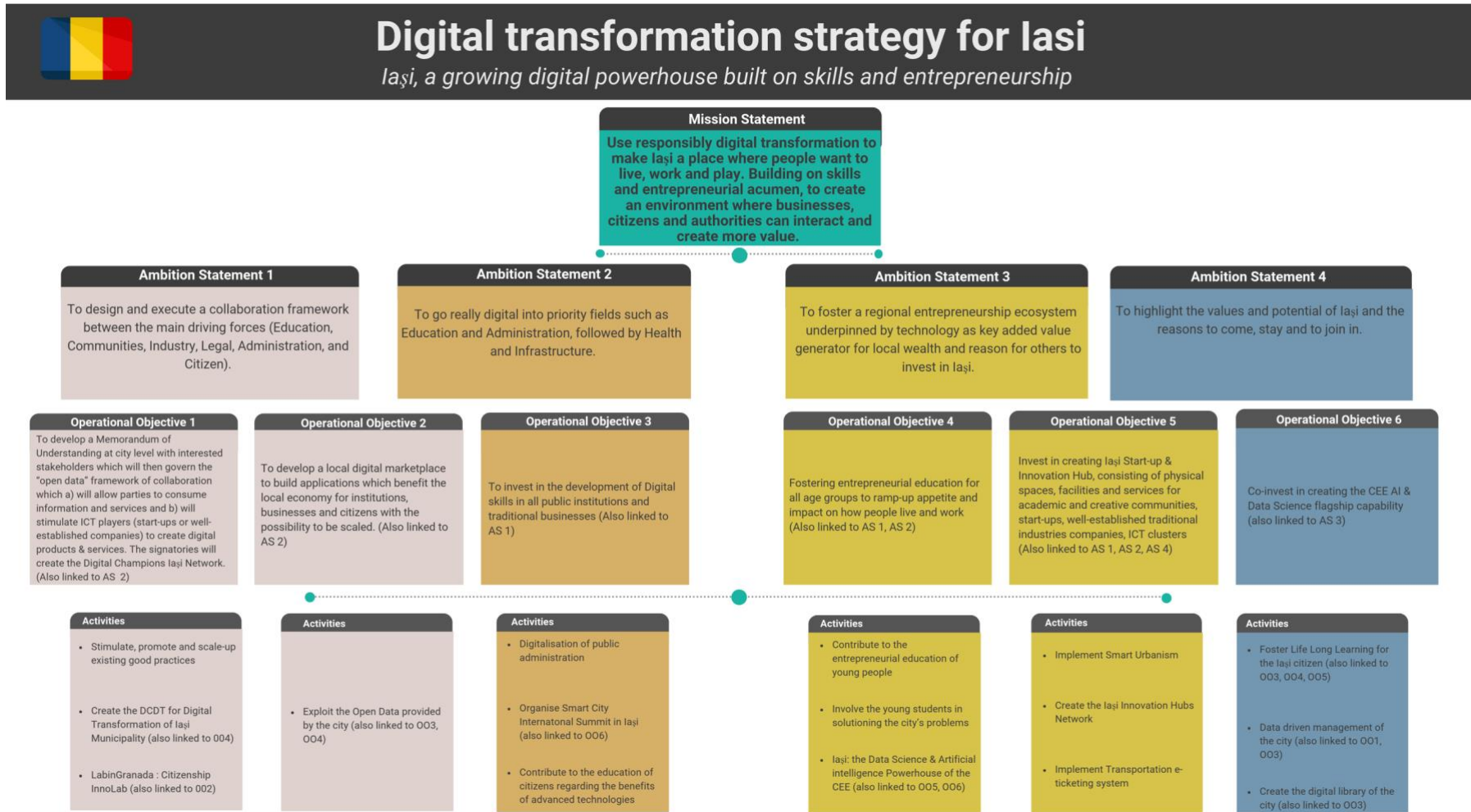
1. Developing the innovation skills of the new generation.
2. Supporting the innovative companies from North-East Romania.
3. Encouraging internationalisation and clustering initiatives.
4. Technical assistance.

There are obvious synergies between the regional priorities and the city digital transformation ambitions; in particular, the DT operational objectives are granular, and very targeted at the city strengths and opportunities and are also action-oriented.

It is notable that one of the organisations in the proposed Governance structure (in the Steer and oversight function) has been the main implementer of the EDP (Entrepreneurial Discovery Process) for regional North-East S3 Governance.

The following figure provides an overview of the full digital transformation strategy for the city of Iași. The individual components are described in further detail in the following sections and sub-sections.

Figure 3 Overview of the Digital Transformation Strategy for the City of Iași



4.2. Operational objectives

Operational objectives reflect the means through which the city of Iași will achieve its ambition statements. They are called ‘operational’ because they are of an actionable nature: they represent the ‘how’ behind the high-level strategic vision which has been developed by the local working group. As demonstrated in the following Table, operational objectives are linked to one or more ambition statements. The city of Iași has identified six operational objectives for its digital transformation strategy.

The following table provides a more detailed presentation of each of the operational objectives.

The DCC team in Iași met during the first Strategy workshop and identified two operational objectives for each of the four ambitions, i.e. a total of eight. During the second Strategy workshop these were prioritised into six operational objectives based on their relative rationale and feasibility. During the debate a consideration was made also on the synergies between the digital transformation strategy and other public strategies for which the choice of operational objectives had been made.

DIGITAL CITIES CHALLENGE – Digital Transformation Strategy

Table 1 Presentation of the operational objectives of the Digital Transformation Strategy for the city of Iași

| Operational objectives and description | Link to ambition statements | Key success factors |
|---|-----------------------------|---|
| <p>1. To develop a Memorandum of Understanding at city level with interested stakeholders which will then govern the “open data” framework of collaboration which a) will allow parties to consume information and services and b) will stimulate ICT players (start-ups or well-established companies) to create digital products & services. The signatories will create the Digital Champions Iași Network.</p> | <p>1 and 2</p> | <ul style="list-style-type: none"> • Critical number of stakeholders across the city to agree collaboration & recognise the topic’s importance (digital transformation and the need to create applications benefiting the local economy). • Digital Champions Network formed in the main public administration bodies and utilities companies with majority public stake, academia and private sector (both small and large companies). • Establishing a third neutral party to build and host a sharing platform. Effort led by local administration. • Key elements of the platform: • Guided by data driven approaches to support Analytics and Artificial Intelligence for optimisation and prediction • Digital identity & trust, federation, decentralised & collaborative decision management (possibly using proven, mainstream technologies or emerging ones such as blockchain) • Cyber-security by design |
| <p>2. To develop a local digital marketplace to build applications which benefit the local economy for institutions, businesses and citizens with the possibility to be scaled.</p> | <p>1 and 2</p> | <ul style="list-style-type: none"> • Local providers and consumers both from business and civil society mobilised to participate. • ‘Challenge owners’ could come from all stakeholder categories. • Data available, structured and APIs built. • Business models interesting to all parties. • Funds availability (relative to scaling up). • Capacity building programmes for SMEs. • Successful OO1 is a pre-condition for this. |

| Operational objectives and description | Link to ambition statements | Key success factors |
|---|-----------------------------|--|
| <p>3. To invest in the development of Digital skills in all public institutions and traditional businesses.</p> | <p>1 and 2</p> | <ul style="list-style-type: none"> • Educate people to better understand the advantages of using technology in their daily work and mitigate their fears related to job security. • Bring together existing training initiatives & scale them up. • Use digital technologies to develop the content (MOOC model) for trainers. |
| <p>4. Fostering entrepreneurial education for all age groups to ramp-up appetite and impact on how people live and work.</p> | <p>1, 2, 3</p> | <ul style="list-style-type: none"> • Schools & universities to get involved. • Amplify existing programmes. • Encourage inclusion in academic curricula. • Public authorities to mobilise adults via social services. • Follow on business support services and finance availability. • Entrepreneurial education with business results in mind. |
| <p>5. Invest in creating lași Start-up & Innovation Hub, consisting of physical spaces, facilities and services for academic and creative communities, start-ups, well-established traditional industries companies, ICT clusters.</p> | <p>1, 2, 3, 4</p> | <ul style="list-style-type: none"> • Linking-up existing workspaces and incubators around the Memorandum of Understanding concept. • Establishing further spaces with local chamber of commerce and public institutions involvement but also with those technology-based outsourcing companies which can provide good practice and talent building for genuine, wider scale digital transformation at the overall city level • Establishing a business support programme for all the physical spaces – providing funding advice, other capacity building also to encourage the more traditional business to review their appetite for transformation through the use of digital technologies. |

| Operational objectives and description | Link to ambition statements | Key success factors |
|---|-----------------------------|---|
| <p>6. Co-invest in creating the CEE AI & Data Science flagship capability.</p> | <p>3, 4</p> | <p>Raising awareness around the potential in universities. Adapting curriculum in the formal education structures and attracting the talent to support the objective. Attracting the industries to invest and to benefit from this capability by providing real-life projects to work on. Creating a learning & networking/collaboration context through conferences, applied innovation events/initiatives. Attracting investment to support and further develop the innovation in the area. Generating a context for digital start-ups with high scaling potential at level.</p> |

5. Digital strategy roadmap and planned activities

The roadmap is the component of the digital transformation strategy that describes the practical implementation of the strategy, including priority activities and governance. Priority activities refer to the specific actions through which the strategy will be implemented. An activity can be described as a tangible and concrete action, which has a beginning and an end, accompanied by a specific objective and resources for its implementation. The results of activities (**i.e. outputs**) are meant to contribute to reaching the operational objectives identified in the previous section.

5.1. Overview of proposed activities

The digital transformation strategy for the city of Iași will be implemented through a group of activities, identified in the framework of the Digital Cities Challenge. Activities are designed to contribute to reaching the operational objectives defined in the framework of the strategy, which in turn will contribute to the city's ambition and mission. The list of priority activities may be expanded over time. For now, the city has decided to implement 12 activities (plus an extra four optional activities marked in italics below), as described in the following Table.

| Activity name | Link to Operational Objectives | Main implementing partner (i.e. owner of the activity) | Brief description and goals |
|---|--------------------------------|--|--|
| 1. Stimulate, promote and scale-up existing good practices | 1 | Iași Municipality | Identify and support a set of already existing good practices / initiatives, scalable across the city and with positive impact for Iași. Define and implement an integrated marketing plan defined to deliver regular PR, internal and external communication on all aspects of the implementation of a citizen and economic growth-oriented Digital Transformation Strategy. Executed in a sustained, multichannel manner. |
| 2. Create the DCDT for Digital Transformation of Iași Municipality | 1, 4 | Iași Municipality | Create a group of specialists from Iași representing all the stakeholder categories (IT, top local industries, well established companies, start-ups, civil society, academic & research, representatives of local authority) to identify digital solutions for the needs of the city. |
| 3. Publish Open Data for Iași Municipality | 1,2 | DCDT | Identification of the data that could potentially be available. Standardisation and publication of these data on an Open Data platform designed to make the data both accessible and useable for analytic purposes. |
| 4. Exploit the Open Data provided by the city | 2, 3, 4 | DCDT | Open Data creates an opportunity to identify solutions to the needs and the development opportunities for the city. Regular innovation and solutioning events will be organised to bring together all stakeholders to analyse and identify the right solutions. Examples of event types/formats: conference, hackathons, other types of civic & organisational engagement etc. |
| 5. Implement Smart Urbanism | 5 | Iași Municipality | Geospatial map of the city to display e.g.: Demographics of the population, issued building permits, urban planning certificates, utility networks, streets, PUG, data collected from utilities suppliers, proprietary associations, etc. for analysis at municipal level |

| Activity name | Link to Operational Objectives | Main implementing partner (i.e. owner of the activity) | Brief description and goals |
|---|--------------------------------|--|---|
| 6. Digitisation of public administration services | 3 | Iași Municipality | Create a catalogue of services that can be digitised. Digitisation of identified public services. The process will be multiplied by all subordinate institutions / commercial organisations. |
| 7. Organise Smart City International Summit in Iași | 3, 6 | Iași Municipality, Iași community | Organise Smart City International Summit in Iași. The planned duration is of 3 days and format includes two sections: a) conference area with presentations, workshops, debate panels on the verticals of a Smart City, and b) exhibition area to see real life examples of smart products, prototypes & demos and to meet entities/exhibitors who implement smart city solutions. |
| 8. Contribute to the education of citizens regarding the benefits of advanced technologies | 3 | DCDT | Help the citizens of Iași to better understand the benefits of using technology in their day-to-day work, to alleviate concerns about job security. Courses, presentations, articles, permanent column in the municipal newspaper, agreements with media providers, use of social networks to help people overcome the barriers created by fear of change and better understand the benefits of using modern technologies. |
| 9. Contribute to the entrepreneurial education of young people | 4 | DCDT | In high schools and universities there is, as yet, no suitable course for entrepreneurial and financial education. Successful entrepreneurs will present in schools, high schools, universities: how they did in business, where they did wrong, what they would do if they had to take it from the start. Entrepreneurial education will be added in the ICT education; the aim is to also entice other faculties (domains) to have joint digital & entrepreneurship courses to offer. |

| Activity name | Link to Operational Objectives | Main implementing partner (i.e. owner of the activity) | Brief description and goals |
|--|--------------------------------|---|---|
| <p>10. Involve the young students in solutioning the city’s problems</p> | <p>4</p> | <p>DCDT</p> | <p>City challenges and opportunities to be presented to young people in universities and high schools as practical project themes for exams. This fosters the educational process by complementing the theory with real life practical missions and creates engagement into and affinity for life of city. The resulting solutions will be publicised and be implemented by the local government where possible.</p> |
| <p>11. Create the Iași Innovation Hubs Network</p> | <p>5</p> | <p>DCDT TBNR FabLab Codecamp</p> | <p>Iași will provide spaces that will be transformed into business incubators, business accelerators and innovation hubs, where start-ups and businesses will be able to get support from the local authority, the Chamber of Commerce and Industry, Technological and Scientific Parks, the European Business and Innovation Networks, such as the Enterprise Europe Network. They will provide advice, personalised services, training programmes and will be able to participate in the economic events that will be held in those spaces. The overall aim is to support new start-ups and existing companies up-scale and contribute to the economic growth in Iași. Purposeful transformation will also mean for Iași a proper research of the reference innovations in the key areas of interest to also identify where local innovation can create a competitive advantage. This initiative will thrive with leadership and direction.</p> |
| <p>12. Iași: the Data Science & Artificial intelligence Powerhouse of the CEE</p> | <p>4, 5, 6</p> | <p>DCDT Strongbytes NDR Codecamp, Iași.AI</p> | <p>Iași is one of the most important IT centres of Romania. However, the digital skills of the city have been used to deliver outsourcing/nearshoring services for more than twenty years, with too few examples of locally generated Intellectual Property or high-value-added services and products.</p> |

| Activity name | Link to Operational Objectives | Main implementing partner (i.e. owner of the activity) | Brief description and goals |
|--|--------------------------------|---|--|
| | | | <p>Advances in the field of Artificial Intelligence technologies represent a huge opportunity for the highly skilled digital workforce of the city to create innovative products and services, to generate Intellectual Property, and foster economic growth in every industry field and society.</p> <p>To prepare the IT industry, the citizen and the businesses for such a fantastic opportunity, education and collaboration contexts are the principal areas to invest into: conferences and intensive training for professionals and businesses, awareness activities for the citizen, dedicated classes/courses for the students in high schools and universities, hackathons, pilot projects etc and many others.</p> <p>The main goals of this activity are: to encourage the local businesses to use advanced technologies, to encourage IT people to get more into the entrepreneurial space and create high value products and Intellectual Property, to empower the IT services companies to sell services with high value added, to attract top talent from the abroad who will find appealing living and working opportunities in Iași .</p> |
| <p>13. Foster Life Long Learning for the Iași citizen</p> | <p>3, 4, 5, 6</p> | <p>DCDT Communities, Public institutions Businesses</p> | <p>Create a collaborative learning context through a web platform that will bring together all conferences and other educational programmes and events in Iași. This will increase the appetite for the population at large for all things digital with focus on life and work improvements. In turn, it will increase the overall digital performance of the city's public services and beyond. This is a performance measure for the city's digital transformation.</p> |
| <p>14. Data driven management of the city</p> | <p>1, 3, 6</p> | <p>DCDT</p> | <p>Based on open data, a Smart Urban Map will be produced to include demographics, average income, natality, to help authorities see where nurseries, kindergartens, schools should be built. Maps of pollution,</p> |

DIGITAL CITIES CHALLENGE – Digital Transformation Strategy

| Activity name | Link to Operational Objectives | Main implementing partner (i.e. owner of the activity) | Brief description and goals |
|--|--------------------------------|--|--|
| | | | noise, temperature, street work, traffic, all maps can be made based on the data they own. Based on these maps, pertinent decisions will be made in managing and optimising the city. |
| 15. Create the digital library of the city | 3, 6 | DCDT | A special library with a collection of digital objects that can include text, visual materials, audio, video, stored as electronic media, about the digital transformation of Iași. A digital library has no physical limits, can be consulted without going to it, availability is non-stop and offers multiple access. The same resources can be used simultaneously by a number of institutions and firms. All these materials will be used to raise citizens' awareness of digital transformation, artificial intelligence, how to use and operate different technologies, the application download store for Iași, etc. |
| 16. Implement Transportation e-ticketing system | 5 | Iași Municipality | The e-ticketing system will allow the collection, storage, transmission and processing of all data relating to the issue, sale, use, validation and control of the transport tickets. The system will be based on validation devices installed in public transport vehicles, rechargeable electronic cards and multi-card cards, as well as ticket purchase via an online platform, SMS, mobile application (Android, iOS), various payment terminals. |

A detailed presentation of each activity is presented in Appendix I.

5.2. The pilot activities

Design4Community: Co-governing Powered by Digital

Design4Community is the major local initiative that supports co-governing (city administration with community) through the use of digital technology. It fits perfectly with the overall city digital strategy as it empowers citizens, communities, private and public institutions to revive public participation and collaborative engagement into the management of the city, which represent a key pillar for a sustainable, long term economic and societal development.

The local community is encouraged through various means (online questionnaires, interviews etc) to identify local challenges/problems and development opportunities and to vote for priorities. Mixed teams of specialists coming from various industry fields, together with local administration specialists, and under the guidance of trained facilitators, will voluntarily employ their expertise and experience to shape proper solutions.

The methodology used to identify sets of innovative solutions is the popular and proven **Design Thinking**. The solutions are then stepped into a public debate process that is meant to validate them through the community's feedback and after that they are implemented by the appropriate groups of public and private institutions.

The project has a duration of 18 months and should be fully operational by the end of 2020. It addresses the top three most voted and strategically relevant local problems. From a digital perspective, the project is supported by a digital platform which allows the community to propose, vote and provide feedback over relevant problems and specialists to engage as volunteers in designing and implementing the best solutions for their city.

Design4Community is a project co-created by the local community and local administration as part of the Local Action Plan on good governance in Iași which was developed in compliance with Open Government Partnership (OGP) requirements, as the city became an OGP member in spring 2018. Hence, the municipality is responsibly assuming ownership over the implementation and the financing from the local budget of the project.

Bring together existing training initiatives & scale them up

Iași is hosting a large variety of technology intensive events organised by communities, companies and public institutions, some with a local character and others international. A few examples: Codecamp, Codecamp Hackathon, NDR – The AI Conference, Civic Hackathon, FinTech Camp, Adapting and Connecting, DevExperience BringITon, FIIPractic,

StagiiPeBune, plenty of technology related meetups, Informal School of IT, various programming courses, and many others.

This pilot activity is designed to bring together as many of these events, under one roof coordinated by the City Hall and helped by voluntary developers, a forum on new technologies and how they can improve the lives of citizens, which can take place over several days.

The expected results are to raise citizens' and public institutions' awareness of the benefits of a smart, digitally empowered city, and to foster their engagement into activities to identify solution providers for their needs. In the long run, the event (or series of connected events) will grow internationally, involving smart-city experts from twin cities, cities participating in the Digital Cities Challenge and the diaspora.

The project will be implemented in the second half of 2019. Part of it involves volunteering through partnerships with NGOs, but European and local funds will also be used. Implementation will be through a partnership between communities, academia, business and the Iași Municipality.

5.3. Timetable for implementation

It is foreseen that the DCC strategy will be implemented over three-to-four years. Activities will be gradually implemented, on the basis of the following indicative timetable. There are also a number of reserve-activities, written in italics.

DIGITAL CITIES CHALLENGE – Digital Transformation Strategy

Table 2 Timetable for the implementation of the digital transformation strategy for the city of Iași

| Activity <i>(‘reserve’ activities in italics)</i> | Jan-Jun 2019 | Jul-Dec 2019 | Jan-Jun 2020 | Jul-Dec 2020 | Jan-Jun 2021 | Jul-Dec 2021 | Jan-Jun 2022 | Jul-Dec 2022 | Jan-Jun 2023 | Jul-Dec 2023 |
|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Pilot Activity 1: Design4Community: Co-governing Powered by Digital | | | | | | | | | | |
| Pilot Activity 2: Bring together existing training initiatives & scale them up | | | | | | | | | | |
| Activity 1: Stimulate, promote and scale-up existing good practices | | | | | | | | | | |
| Activity 2: Create the Digital Council for Digital Transformation of Iași | | | | | | | | | | |
| Activity 3: Publish Open Data for Iași Municipality | | | | | | | | | | |
| Activity 4: Exploit the Open Data provided by the city | | | | | | | | | | |
| Activity 5: Implement Smart Urbanism | | | | | | | | | | |

DIGITAL CITIES CHALLENGE – Digital Transformation Strategy

| Activity <i>(‘reserve’ activities in italics)</i> | Jan-Jun 2019 | Jul-Dec 2019 | Jan-Jun 2020 | Jul-Dec 2020 | Jan-Jun 2021 | Jul-Dec 2021 | Jan-Jun 2022 | Jul-Dec 2022 | Jan-Jun 2023 | Jul-Dec 2023 |
|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Activity 6: Digitisation of public administration services | | | | | | | | | | |
| Activity 7: Organise Smart City International Summit in Iași | | | | | | | | | | |
| Activity 8: Education of the citizens regarding the benefits of the advanced technologies | | | | | | | | | | |
| Activity 9: Contribute to the entrepreneurial education of the young people | | | | | | | | | | |
| Activity 10: Involve the young students (high school, university) in solutioning the city problems | | | | | | | | | | |
| Activity 11: Create the Iași Innovation Hubs Network | | | | | | | | | | |
| Activity 12: Iași, The Data Science & Artificial intelligence Powerhouse of the CEE | | | | | | | | | | |

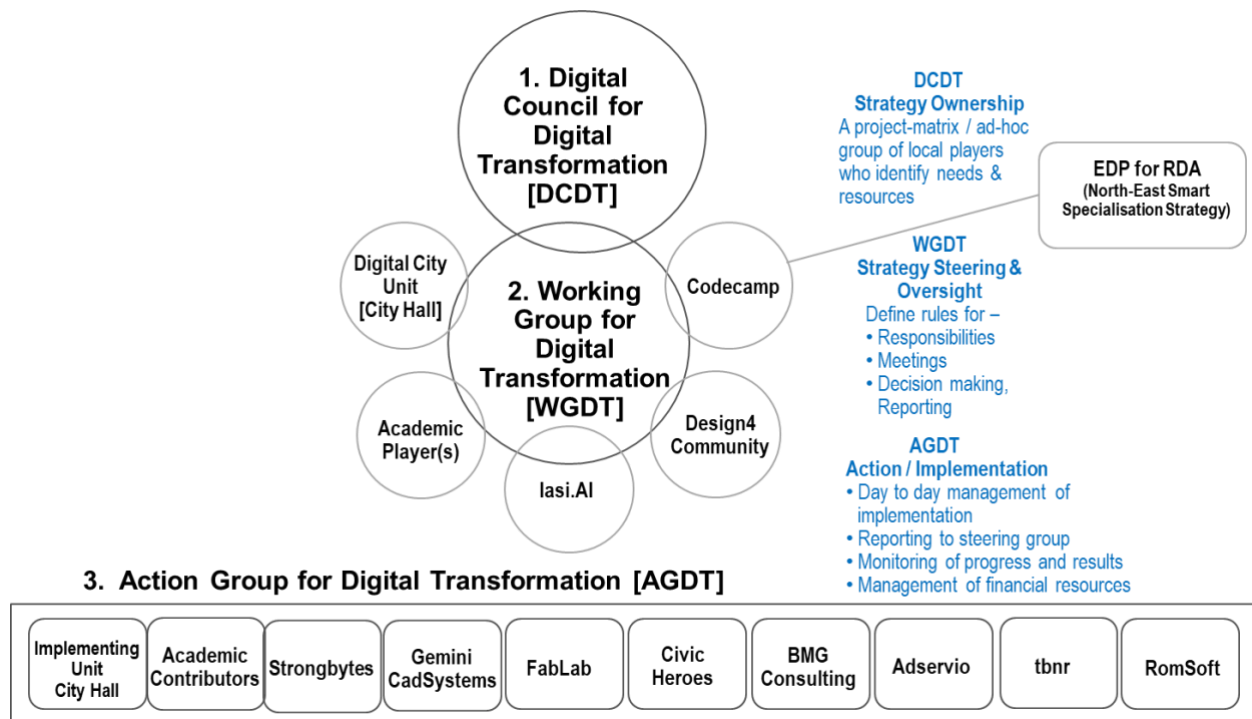
DIGITAL CITIES CHALLENGE – Digital Transformation Strategy

| Activity <i>(‘reserve’ activities in italics)</i> | Jan-Jun 2019 | Jul-Dec 2019 | Jan-Jun 2020 | Jul-Dec 2020 | Jan-Jun 2021 | Jul-Dec 2021 | Jan-Jun 2022 | Jul-Dec 2022 | Jan-Jun 2023 | Jul-Dec 2023 |
|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Activity 13: Foster Life Long Learning for the Iași citizen | | | | | | | | | | |
| Activity 14: Data driven management of the city | | | | | | | | | | |
| Activity 15: Create the digital library of the city | | | | | | | | | | |
| Activity 16: Implement Transportation e-ticketing system | | | | | | | | | | |

6. Strategy governance

Iași has a significant pool of entities which have been involved in defining the Digital Transformation Strategy; the contributions to-date came from the City Hall, education, private companies, community and civic societies, innovation / entrepreneurial hubs, accelerators, start-ups, research centres. The figure below represents the proposed governance structure for the Digital Transformation Strategy (DTS) for the city of Iași. It is designed to be simple and operational and also includes the political component.

Figure 4 Governance scheme for the digital transformation strategy for the city of Iași



By definition, a Digital Transformation Strategy represents the very essence of connectivity between players and relies on trust and a genuine, proactive collaboration amongst key stakeholders.

For this reason, the three main levels in the DTS Governance for Iași are:

1. A **Digital Council for Digital Transformation (DCDT)**: a core group (ad-hoc body) of dedicated and stable local representatives from all sectors of the local economy, private

and public, who will have an over-arching mandate to manage the Digital Transformation Strategy for Iași.

The composition of the DCDT is flexible in the sense that it allows for re-generation with any relevant competence and expertise to continuously future-proof the Digital Transformation Strategy.

For compliance with existing legislation (and local procedures) it is recognised that the City Hall will also have its own individual, parallel governance scheme (ownership, steering and implementation) but that representation and links to all of the three levels in the DCDT will be established once the DCDT is established.

2. The strategy steering and oversight function would be ensured by a **Working Group for Digital Transformation (WGDT)** which is driven by Iași's strategic priorities. Iași is likely to decide to have multiple sub-groups if very specific thematic projects require the definition of more granular domain-specific decision-making procedures.
3. The core WGDT is represented by the Digital Unit in the City Hall together with key Academic-community representatives, Design4Community and Codecamp as a representative for the Iași IT community. The bonus is that the latter is also an experienced supplier of EDP (Entrepreneurial Discovery Process) services to the Regional Smart Specialisation Strategy (RIS3), managed by the North East Regional Development Agency
4. The Strategy Implementing Agents (**Action Group for Digital Transformation AGDT**) are a mix of the Implementing Unit in the City Hall and organisations with proven record of capacity building, managing technology and technology marketing projects locally. The companies listed are Strongbytes, BMG Consulting, Civic Heroes, Gemini CadSystems, FabLab, Adservio, tbnr, RomSoft. Most of these organisations have developed Good Practices in Iași.

7. Monitoring and evaluation of the Digital Transformation Strategy

In order to monitor and assess progress achieved as part of the digital transformation strategy, a performance assessment framework has been developed by the city team. In addition, the team has outlined preliminary evaluation plans and resources as part of an early evaluation plan.

7.1. Performance assessment framework

Strategy implementation and results monitoring will be conducted by the City Hall together with the Digital Council for Digital Transformation (DCDT). Centralised monitoring will be ensured by a group of stakeholders in the working group on the basis of the performance assessment framework presented in Appendix II. Three levels of monitoring indicators and targets have been defined:

- **Outcome indicators** have been established at the level of the Ambition Statements.
- **Intermediate outcome** indicators have been established at the level of operational objectives.
- **Output indicators** have been established at the level of activities.

The City Hall, together with the Digital Council for Digital Transformation co-own the strategy. The City Hall will be in charge of collecting data on all strategy monitoring indicators. However, it's expected that activity implementing partners will also play a key role in generating, collecting and sharing performance data. This information will be used for internal monitoring and reporting purposes. As such it will be communicated to the Working Group for Digital Transformation (as a steering body) on a regular basis.

The performance assessment framework will surely evolve as the city enters the full strategy implementation phase. The regularity and depth of monitoring will also be further specified by the steering bodies.

7.2. Strategy evaluation plan

In addition to monitoring the progress of strategy implementation, the Digital Transformation Strategy for Iasi will undergo an internal evaluation within the next 2 years, and, possibly also an external evaluation within 3 years. The objective of the evaluation mainly be to verify the extent to which expected strategy results have been achieved, review the relevance of selected strategy priorities and objectives, and review the efficiency of strategy implementation and governance schemes. The evaluation questions guiding the evaluation will be defined by the Digital Council (DCDT) with the support of the steering committee. The Digital Council will define when and what to evaluate (e.g. mid-term, ex-post; internal vs. external; comprehensive vs. topic-specific).

An additional impact evaluation may be conducted after 6 years of strategy implementation. The impact evaluation will be mainly focused on assessing strategy outcomes and likelihood of impact.

When relevant, individual activity managers will be encouraged to conduct activity-specific evaluations and assessments. The information drawn from activity evaluations and assessment will feed into the general strategy evaluations.

Iasi needs a flexible Digital Transformation strategy which can be adjusted to possible new ambitions, revised objectives and European trends which may be of interest in the future.

8. Results achieved and next steps

The Iași DCC team has achieved a coherent and clear strategy for digital transformation and is already progressing with the implementation of a number of activities. Notable results are as follows:

Strengthened local leadership and governance

- Iași has set up a ‘Digital Council for Digital Transformation’ (*Activity 2*). The first meeting took place on 3 April 2019 and a set of draft rules and attributions were agreed. Both funding and the creation and use of Open Data were discussed.

The community is engaged in digital transformation

- The Mayor hosted a conference to promote the Digital Transformation Strategy (part of *Activity 1*) attended by over 70 participants; the event was widely presented in the news media both during and after the conference and created a momentum of awareness, interest and involvement.

Improving digital maturity through wider access to bi-directional information

- A local company has developed an on-line platform ‘Iași Smart City’ which (a) publishes projects implemented in the city, (b) promotes IT&C events (c) promotes any types of events in the city and (d) encourages citizens to submit proposals in order to create a sustainable communication and understanding of needs. (*Activity 2*).

Learning and inspiration from other cities

- The Digital Council is exploring an Open Data partnership with Code4Romania, which has already set up a working relationship in other Romanian university cities. In addition, the Digital Council is keen to understand how other European cities (within DCC) have delivered their Open Data strategy and the associated funding. (*Activity 3, 4*).

Highlight high-impact underlying operations in the strategy

- The highest impact to-date has been the promotion of existing local talent and expertise (from business, the public sector and the academic, community) which has reached out to the political leadership of the city. (*Activities 1, 2*).

Achievements in terms of implementation of the strategy e.g. implementation of pilot activities

- Bringing together training initiatives (*Pilot 2*) is fed by the on-line platform ‘Iași Smart City’ and enhanced by the education of citizens of the benefits of advanced technologies (*Activity 8*).

The Faculty of Economy and Business Administration now hosts Management Lessons where a business person is invited to talk about his/her experience. (*Activity 9*).

A local team is already defining the community engagement strategy and developing a platform although the project is planned to start officially on 1st September 2019 (*Pilot 1*)

Examples of joint projects with other DCC cities or plans for cooperation that will lead to shared investments or action

- The Digital Council is keen to understand how other DCC cities endeavour to deliver their Open Data strategy and the associated funding. (*Activity 3, 4*).

Other achievements:

Advanced infrastructure and solutions

- Iași has been selected by the Romanian Government as a reference city for the implementation of 5G technology.
- Iași is working towards a solution for citizen safety together with a telecom operator and European partners in an Horizon 2020 ICT 15 project.
- Iași has finalised the Feasibility Study and released the Tender document for e-ticketing system (*Activity 16*).

Reserve activities brought forward

- Involved students in creating solutions for the city starting with a ‘tourist map + audio’ application to be installed on public transport (*Activity 10*).

Steps to be taken upon the completion of the digital transformation trajectory (as per timeline in 5.3)

- The Mayor of Iași has endorsed the Digital Council. The Digital Council is now in the process of getting formalised via a Mayoral ‘disposition’ (provision). They are also seeking for clarity if, subsequently, they need to submit the strategy for formal approval by the City Council or not.

- To continue the roll out and implementation of the road map, the City Hall is in the process of setting up a Digital Department for Iași (completion expected by end April 2019). At least one representative of the City Hall Digital Department is part of the Digital Council.
- Once the 'disposition' (mayoral provision) is concluded, the City Hall and Digital Council will work together on increasing the availability of funds both from the local budget, EU and other sources.
- At least one representative of EC funding department in the City Hall is part of the Digital Council. Relevant EC initiatives and opportunities for funding will be explored by the members together and presented during the regular meetings when the roles in possible projects are established. At the moment the Digital Council is exploring the EC EIT Digital opportunity.

Appendix I: Detailed presentation of activities

| Activity 1: Stimulate, promote and scale-up existing good practices | |
|---|--|
| Link to operational objective | 1 |
| Description | <p>Identify and support a set of already existing good practices/initiatives, scalable across the city, and having positive impact for Iași.</p> <p>Define and implement an integrated marketing plan defined to deliver regular PR, internal and external communication on all aspects of the implementation of a citizen and economic growth-oriented Digital Transformation Strategy. Executed in a sustained, multichannel manner.</p> <p>Create and maintain a regular, sustained multi-media communications plan to communicate:</p> <ul style="list-style-type: none"> • The aims, progress and successes of the DCC • A sense of mutual respect between the various contributors • Pride in Iași as an innovative city • Pride in Iași as a city in which to live, work and play |
| Timeframe | <p>Length: 60 months</p> <p>Estimated date of implementation: yearly until 2023</p> <p>Start: Q1 2019, Planned completion: Q1 2023</p> |
| Indicators to be achieved | 3 selected good practices supported/year |
| Estimated cost and source of funding | <p>150.000 € / year</p> <p>European and local funds</p> |
| Organisation / unit in charge of delivery | Iași Municipality |

| Activity 2: Create the Digital Council for Digital Transformation of Iași | |
|--|---|
| Link to operational objective | 1,4 |
| Description | Reunion of specialists from Iași representing all the stakeholder categories (IT, top local industries, well established companies, start-ups, civil society, academic & research, representatives of local authority) to own the Digital Transformation Strategy and collaboratively identify digital solutions for the needs of the city. |
| Timeframe | Length: 2 months Estimated date of implementation: Q1 2019 Start: Feb 2019, Planned completion: March 2019 |
| Indicators to be achieved | 15 representatives in the group |
| Estimated cost and source of funding | 1,000 € Local funds |
| Organisation / unit in charge of delivery | Iași Municipality + DCC stakeholders |

| Activity 3: Publish Open Data for Iași Municipality | |
|---|---|
| Link to operational objective | 1 |
| Description | Identification of the data that can be provided by Iași, standardisation and publication of them on an Open Data platform |
| Timeframe | Length: 12 months Estimated date of implementation: Q1 2020 Start: Q1 2019, Planned completion: Q1 2020 |
| Indicators to be achieved | 8-10 most relevant entities provide Open Data |
| Estimated cost and source of funding | 500,000 € Local funds |
| Organisation / unit in charge of delivery | Iași Municipality + DCDT |

| Activity 4: Exploit the Open Data provided by the city | |
|---|--|
| Link to operational objective | 3,4 |
| Description | Open Data creates the opportunity to find solutions to the needs and the development opportunities of the city. Regular innovation and solutioning events will be organised to bring together all stakeholders to analyse and identify the right solutions. Examples of event types/formats: conference, hackathons, other types of civic & organisational engagement etc. |
| Timeframe | Length: 24 months Estimated date of implementation: 2020-2021 Start Q1 2020; Planned completion: Q4 2021 |
| Indicators to be achieved | 2 events organised. 10 challenges raised and debated. 7 solutions found. |
| Estimated cost and source of funding | 500,000 € European and local funds |
| Organisation / unit in charge of delivery | DCDT |

| Activity 5: Implement Smart Urbanism | |
|--|---|
| Link to operational objective | 5 |
| Description | Geospatial map of the city to display: Demographics of the population, issued building permits, urban planning certificates, utility networks, streets, PUG, data collected from utilities suppliers, proprietary associations, etc. for analyses at municipal level. |
| Timeframe | Length: 24 Estimated date of implementation: 2020 Start: Q1 2020, Planned completion: Q4 2021 |
| Indicators to be achieved | System in use. 80% of permit enquiries solved through it. |
| Estimated cost and source of funding | 500,000 € Local funds. . |
| Organisation / unit in charge of delivery | Iași Municipality |

| Activity 6: Digitisation of public administration services | |
|---|--|
| Link to operational objective | 3 |
| Description | Producing the catalogue of services that can be digitised. Digitisation of identified public services. The process will be multiplied by all subordinate institutions / firms. |
| Timeframe | Length: 12 months Estimated date of implementation: 2019-2020 Start Q3 2019:, Planned completion: Q2 2020 |
| Indicators to be achieved | 8-10 identified services are digital |
| Estimated cost and source of funding | 500,000 € Local funds |
| Organisation / unit in charge of delivery | Iași Municipality |

| Activity 7: Organise Smart City International Summit in Iași | |
|---|---|
| Link to operational objective | 3,6 |
| Description | Organise Smart City International Summit in Iași. The planned duration is of 3 days and format includes two sections: a) conference area with presentations, workshops, debate panels on the verticals of a Smart City, and b) exhibition area to see real life examples of smart products, prototypes & demos and to meet entities/exhibitors who implement smart city solutions. |
| Timeframe | Length: 3-day event, which requires 6-12 months preparation; organised every year Estimated date of implementation: Q1 2023 Start: Q1 2019, Planned completion: Q1 2023 |
| Indicators to be achieved | 1,000 participants |
| Estimated cost and source of funding | 80,000 € / year Local funds |
| Organisation / unit in charge of delivery | Iași Municipality, Iași community |

| Activity 8: Contribute to the education of the citizen regarding the benefits of the advanced technologies | |
|---|---|
| Link to operational objective | 3 |
| Description | Help the citizen to better understand the benefits of using technology in their day-to-day work, to alleviate concerns about job security. Courses, presentations, articles, permanent column in the municipal newspaper, agreements with media providers, use of social networks to help people overcome the barriers created by fear of change and better understand the benefits of using modern technologies. |
| Timeframe | Length: 36 months Estimated date of implementation: 2022 Start Q3 2019:, Planned completion: Q4 2022 |
| Indicators to be achieved | Introduce 3 appropriate courses in high school/universities Create awareness for the most important tech areas to at least half of the active population |
| Estimated cost and source of funding | 500,000 € European and local funds |
| Organisation / unit in charge of delivery | DCDT |

| Activity 9: Contribute to the entrepreneurial education of the young people | |
|--|---|
| Link to operational objective | 4 |
| Description | In high schools and universities, there is no suitable course for entrepreneurial and financial education. Successful entrepreneurs will be present in schools, high schools, universities, how they did in business, where they did wrong, what they would do if they had to take it from the start. We will develop the entrepreneurial spirit in the city. |
| Timeframe | Length: 36 months Estimated date of implementation: 2022 Start Q3 2019: Planned completion: Q4 2022 |
| Indicators to be achieved | 5 appropriate activities introduced in the curricula and delivered |
| Estimated cost and source of funding | 1,000,000 € / year European and local funds |
| Organisation / unit in charge of delivery | DCDT |

| Activity 10: Involve the young students in solutioning the city problems | |
|---|--|
| Link to operational objective | 4 |
| Description | City challenges and opportunities to be presented young people in universities and high schools practical project themes for exams. This fosters the educational process by complementing the theory with real life practical missions and creates engagement into and affinity for life of city. The resulting solutions will be implemented by the local government. |
| Timeframe | Length: 36 months Estimated date of implementation: 2022 Start: Q1 2020, Planned completion: Q4 2022 |
| Indicators to be achieved | 12 relevant activities performed in all high schools and universities |
| Estimated cost and source of funding | 1,000,000 € / year European and local funds |
| Organisation / unit in charge of delivery | DCDT |

| Activity 11: Create the Iași Innovation Hubs Network | |
|---|--|
| Link to operational objective | 5 |
| Description | Iași will provide spaces that will be transformed into business incubators, business accelerators and innovation hubs, where start-ups and businesses will be able to get support from the local authority, the Chamber of Commerce and Industry, Technological and Scientific Parks, the European Business and Innovation Networks, such as the Enterprise Europe Network. They will get advice, personalised services, training programmes and will be able to participate in the economic events that will be held in those spaces. |
| Timeframe | Length: 60 months Estimated date of implementation: 2023 Start:Q1 2019, Planned completion:Q4 2023 |
| Indicators to be achieved | 5 hubs are operational |
| Estimated cost and source of funding | 10,000,000 € European and local funds |
| Organisation / unit in charge of delivery | DCDT; tbnr, Fab Lab, Codecamp |

| Activity 12: Iași, The Data Science & Artificial intelligence Powerhouse of the CEE | |
|--|--|
| Link to operational objective | 4,5,6 |
| Description | <p>Iași is one of the most important IT centres of Romania. However, the digital skill of the city is for more than twenty years used to deliver outsourcing/nearshoring services, with too few examples of locally generated Intellectual Property or high-value-added services and products.</p> <p>The advances in the Artificial Intelligence technologies field represent a huge opportunity for the highly skilled digital workforce of the city to create innovative products and services, to generate Intellectual Property, and foster economic growth in every industry field and society.</p> <p>To prepare the IT industry, the citizen and the businesses for such a fantastic opportunity, education and collaboration contexts are the principal areas to invest into: conferences and intensive training for professionals and businesses, awareness activities for the citizen, dedicated classes/courses for the students in high schools and universities, hackathons, pilot projects etc and many others.</p> <p>Among the main goals are of this activity: to encourage the local businesses to use the advanced technologies, to encourage the IT people to get more into the entrepreneurial space and create high value products and Intellectual Property, to empower the IT services companies to sell services with high value add, to attract top talent from the abroad who will find appealing living and working opportunities in Iași</p> |
| Timeframe | <p>Length: 48 months</p> <p>Estimated date of implementation: 2023</p> <p>Start: Q1 2019, Planned completion: Q4 2023</p> |
| Indicators to be achieved | 500-700 AI skilled people working actively on commercial projects |
| Estimated cost and source of funding | <p>3,000,000 €</p> <p>European and local funds</p> |
| Organisation / unit in charge of delivery | DCDT, Strongbytes, NDR, Codecamp, Iași.AI |

| Activity 13: Foster Life Long Learning for the Iași citizen | |
|---|---|
| Link to operational objective | 3,4,5,6 |
| Description | Create a collaborative learning context through applied innovative initiatives and a platform that will bring together all conferences and other educational programs and events in Iași. |
| Timeframe | Length: 24 months Estimated date of implementation: 2021 Start: Q1 2020, Planned completion: 2021 |
| Indicators to be achieved | Platform operational. Beta test user group activated |
| Estimated cost and source of funding | 1,750,000 € European and local funds |
| Organisation / unit in charge of delivery | DCDT. Communities, public institutions, businesses |

| Activity 14: Data driven management of the city | |
|--|---|
| Link to operational objective | 1,3,6 |
| Description | Based on open data, demographic maps will be made based on age, average income, natality, to help authorities see where nurseries, kindergartens, schools should be built. Maps of pollution, noise, temperature, street work, traffic, all maps can be made based on the data they own. Based on these maps, pertinent decisions will be made in managing and optimizing the city. |
| Timeframe | Length: 42 months Estimated date of implementation: Q3 2019 Start: Q3 2019, Planned completion: Q2 2022 |
| Indicators to be achieved | 5 sets of real-time data available to develop applications for city. 3 cases presented to citizens in organised meetings |
| Estimated cost and source of funding | 2,500,000 € European and local funds |
| Organisation / unit in charge of delivery | DCDT |

| Activity 15: Create the digital library of the city | |
|--|---|
| Link to operational objective | 3,6 |
| Description | A special library with a collection of digital objects that can include text, visual materials, audio, video, stored as electronic media, about the digital transformation of Iași. A digital library has no physical limits, can be consulted without going to it, availability is non-stop and offers multiple access. The same resources can be used simultaneously by a number of institutions and firms. All these materials will be used to raise citizens' awareness of digital transformation, artificial intelligence, how to use and operate different technologies, the application download store for Iași , etc. |
| Timeframe | Length: 24 months Estimated date of implementation: 2022 Start: Q3 2020, Planned completion: Q3 2022 |
| Indicators to be achieved | Digital library operational |
| Estimated cost and source of funding | 1,800,000 € European and local funds |
| Organisation / unit in charge of delivery | DCDT |

| Activity 16: Implement Transportation e-ticketing system | |
|--|---|
| Link to operational objective | 5 |
| Description | The e-ticketing system will allow the collection, storage, transmission and processing of all data relating to the issue, sale, use, validation and control of the transport titles. The system will be based on validation devices installed in public transport vehicles, rechargeable electronic cards and multi-card cards, as well as ticket purchase via an online platform, SMS, mobile application (Android, iOS), various payment terminals. |
| Timeframe | Length: 24 months Estimated date of implementation: 2020 Start: Q1 2019, Planned completion: Q4 2020 |
| Indicators to be achieved | Platform in operation throughout the city. |
| Estimated cost and source of funding | 2,000,000 € European funds |
| Organisation / unit in charge of delivery | Iași Municipality |

Other activities (reserve list)

Iași - a city where the blind can "see" has emerged as a necessity to ensure the safety of visually impaired people: blind, partially blind or the visually impaired. Inclusion is a fundamental requirement of any "smart city," so this activity is a way in which technology can help visually impaired people navigate in urban areas and fully experience urban life.

Iași - a city where the blind can "see" was chosen as a pilot project because it is scalable and can be developed in several stages. In the pilot phase, an intersection will be fitted with beacon devices which, through an application, will transmit to blind people what colour the traffic light has. Classical devices with audible signals pollute the area, disturbing those living near the intersection. Scalability consists in multiplying the solution at all intersections in the city, and the development consists of: mounting a beacon on public transport vehicles, thus informing the blind when the bus / tram approaches the station, mounting the beacon on street signs, letting people with visual impairments know where the street is and what institutions / objectives are nearby.

The project will be implemented in the fourth quarter of 2019. Part of it involves volunteering through partnerships with NGOs, but European and local funds will also be used. As the implementation will be on the public domain, the main responsible for its implementation will be the Iași Municipality.

Appendix II: Performance assessment framework

1. Strategy outcomes

| | Expected result | Monitoring indicator | Baseline | Target | Timeframe | Means of verification |
|-----------------------------|--|---|---|---|-------------|--|
| Ambition statement 1 | To design and set-up a collaboration framework between the main driving forces (Education, Communities, Industry, Legal, Administration - and Citizen) | 1: Implementation of the Digital Council for Digital Transformation of Iași Municipality (DCDT) | A list of candidates recommended for the Digital Council - including representatives of the administration, the business, academia and civil society. | Coordinate at least 20 initiatives to increase digitisation at the city level | End of 2025 | All proposals will be recorded in a register – to include the degree of achievement, the problems encountered, the completion or abandonment and the reason. |
| Ambition statement 2 | To go really digital into fields such as Education, Health, Infrastructure, Administration. | 2: Creating an Open Data Platform | There are no published datasets of the city in any field | Creating a dedicated platform containing at least three sets of open data for each sector | End of 2027 | The existence of the "Open Data" platform and the number of published data sets. |

DIGITAL CITIES CHALLENGE – Digital Transformation Strategy

| | Expected result | Monitoring indicator | Baseline | Target | Timeframe | Means of verification |
|-----------------------------|---|--|--|---|-------------|---|
| Ambition statement 3 | To foster a regional entrepreneurship ecosystem underpinned by technology as a key value-added generator for local wealth and reason for others to invest in Iași | 3: Number and impact of entrepreneurial education programs | A letter will be sent by the Digital Council to all providers of education to enquire about (1) the number and (a) nature of relevant programs they run in Iași and (c) an estimate of those programs' impact on economic growth (<i>an indicator to be defined</i>) | Increase by 5% of the number of entrepreneurial education programs. An increase of impact in local economic growth. | End of 2025 | Letters received and answered by the education providers. |
| Ambition statement 4 | To highlight the values and potential of Iași and the reasons to come, stay and to join in | 4: The balance of residence change | Request from the Institute of Statistics on the number of people who settle their residence in Iași municipality and those who move elsewhere. | If, year-on-year for at least 2 years, the balance is negative, the target is to overturn it. If the balance is positive, the target is to increase the difference by 5%. | End of 2025 | Request from the Institute of Statistics for the number of people who settle their residence in Iași municipality and those who move elsewhere. |

2. Strategy intermediate outcomes

| | Expected result | Monitoring indicator | Baseline | Target | Timeframe | Means of verification |
|--|---|--|--|---|-----------|--|
| Operational objective 1.1 ; 2.1 | To govern the “open data” framework of collaboration | 1.1.1 / 2.1.1: # of open datasets 1.1.2 / 2.1.2: % of datasets offering real time information | 1.1.1 / 2.1.1: 0 1.1.2 / 2.1.2: 0 | 1.1.1 / 2.1.1: 3 1.1.2 / 2.1.2: 10% | 40 months | Number of published data sets on the "Open Data" platform |
| Operational objective 1.2 ; 2.2 | To build a digital marketplace of applications | 1.2.1 / 2.2.1: # of mobile applications available in the city on smartphones | Number of relevant applications for Iași on Magazin Play, Android specialised apps and App Store, iOS specialised applications. | 7% increase in the number of applications dedicated to Iași | 60 months | Count of specialised applications developed for Iași and available to users. |
| Operational objective 1.3 ; 2.3 | To develop digital skills in public institutions and traditional businesses | 1.3.1 / 2.3.1: # of institutions actively involved in digital education programs | Assessing training needs in (a) public administration and (b) traditional businesses | Increase training time allowance in both (a) and (b) by 50% year-on-year to achieve core digital skillset | 60 months | Publish report with the needs identified for (a) and (b) and associated proposals to meet the target |
| Operational objective 1.4 ; 2.4 ; 3.1 | To foster entrepreneurial education for all age groups | 1.4.1 / 2.4.1 / 3.1.1: # of digital startups | The number of (a) specialised IT & C companies and (b) digitally-enabled companies (not restricted to IT&C sector) set up year-on-year in Iași | Increase the number of both (a) and (b) by 5% per year | 60 months | Annual counts by sector (a) and (b) from the Chamber of Commerce and Industry Iași. |

DIGITAL CITIES CHALLENGE – Digital Transformation Strategy

| | Expected result | Monitoring indicator | Baseline | Target | Timeframe | Means of verification |
|--|--|--|--|---|--|--|
| Operational objective 1.5 ; 2.5 ; 3.2 ; 4.1 | To create Iași Start-up & Innovation Hub | 1.5.1 / 2.5.1 / 3.2.1 / 4.1.1: # of Innovation Hubs 1.5.2 / 2.5.2 / 3.2.2 / 4.1.2: # of Innovation Events | 1.5.1 / 2.5.1 / 3.2.1 / 4.1.1: 0 1.5.2 / 2.5.2 / 3.2.2 / 4.1.2: the 2018 profile events will be counted | 1.5.1 / 2.5.1 / 3.2.1 / 4.1.1: at least one realised hub of innovation 1.5.2 / 2.5.2 / 3.2.2 / 4.1.2: a 5% increase in innovation events | 1.5.1 / 2.5.1 / 3.2.1 / 4.1.1: 60 months 1.5.2 / 2.5.2 / 3.2.2 / 4.1.2: 50 months | 1.5.1 / 2.5.1 / 3.2.1 / 4.1.1: The legal incorporation (set-up) document for the Innovation Hub 1.5.2 / 2.5.2 / 3.2.2 / 4.1.2: Events will be published and counted on the platform dedicated to digital events |
| Operational objective 3.3 ; 4.2 | To co-invest in creating the CEE's AI & Data Science flagship capability | 3.3.1 / 4.2.1: # of AI & Data Science related learning events / conferences | The number and profile of the 2018 events will be the baseline | A 5% increase in AI & Data Science related learning events / conferences | 60 months | Events will be published and counted on the platform dedicated to digital events. |

3. Strategy outputs

| | Expected result | Monitoring indicator | Target | Timeframe | Means of verification |
|---------------------------------|---|---|---|---------------|--|
| Activity 1.1.1 / 2.2.1 | Create the Digital Council for Digital Transformation of Iași | 1.1.1.1 / 2.2.1.1: Implementation of the Digital Council for Digital Transformation of Iași Municipality (DCDT) | A stable core of the Digital Council for Digital Transformation of the Municipality consists of at least 5 people | Six months | The number of people who sign the Code of Conduct of the Digital Council for Digital Transformation of Iași Municipality |
| Activity 1.1.3 / 2.2.3 | Publish Open Data for Iași | 1.1.3.1 / 2.2.3.1: # of open datasets | 3 | Twelve months | Number of published data sets on the "Open Data" platform |
| Activity 1.1.4 / 2.2.4 | Exploit the Open Data by Iași | 1.1.4.1 / 2.2.4.1: # of events based on open datasets | 2 | 24 months | Events will be published and counted on the platform dedicated to digital events |
| Activity 1.1.5 / 2.2.5 | Implement Smart Urbanism | 1.1.5.1 / 2.2.5.1: % of permit enquiries solved through it | 80 % | 24 months | The application is installed and being used by the relevant staff in the Iași Mayor Office |
| Activity 1.1.6 / 2.2.6 | Digitalisation of public administration services | 1.1.6.1 / 2.2.6.1: # of digital public services offered | 8 – 10 | 12 months | Number of digital public services rendered by local administration in the year 2018 compared to those offered at the end of 2025 |
| Activity 1.1.16 / 2.2.16 | Implement Transportation e-ticketing system | 1.1.16.1 / 2.2.16.1: % of transportation e-ticketing system | 1 | 24 months | A functional transportation e-ticketing platform |

DIGITAL CITIES CHALLENGE – Digital Transformation Strategy

| | Expected result | Monitoring indicator | Target | Timeframe | Means of verification |
|---------------------------------|--|---|---------------|------------------|---|
| Activity 1.3.2 / 2.3.2 | Stimulate, promote and scale up existing good practice | 1.3.2.1 / 2.3.2.1: # of good practice promoted as part of a strategic marketing and communication plan | 3 per year | 60 months | A fluent and enriched marketing, branding and communication plan which sets out the objectives for each practice and tactics to achieve exposure and impact |
| Activity 1.3.8 / 2.3.8 | Education of the citizen on the benefits of advanced technologies | 1.3.8.1 / 2.3.8.1: # of articles in the municipal newspaper | 50 | 60 months | Published in the local public administration newspaper. (both hard-copy and online versions). |
| Activity 1.4.9 / 3.1.9 | Contribute to the entrepreneurial education of the young people | 1.4.9.1 / 3.1.9.1: # appropriate activities introduced in the curricula and delivered in blended education programs | 5 | 42 months | New curricula for blended education (education + business) agreed and published based on the assessment of local needs |
| Activity 3.2.11 / 4.1.11 | Create the Iași Innovation Hubs Network | 3.2.11.1 / 4.1.11.1: # of Innovation Hubs | 5 | 60 months | The Innovation Hubs are present online |
| Activity 3.3.12 / 4.2.12 | Iași, The Data Science & Artificial intelligence Powerhouse of the CEE | 3.3.12.1 / 4.2.12.1: # of AI skilled people working actively in commercial projects How many people work in AI at current time in Iași | 500 – 700 | 48 months | Number of employees of the companies in the AI field will be collected from the balance sheets submitted to the Ministry of Finance |

Appendix III: Relevant Good practices

A generous pool of good practice developed by Iași players has been identified; they cover well the digital transformation dimensions as illustrated in the matrix below.

Figure 5 Good Practice from Iași mapped to Digital Transformation Dimensions

| GP# | | Community | Digital competencies of companies | Digital skillset | Finance | Governance & leadership | Infrastructure | Open Data | Support Services |
|-----|-----------------------|-----------|-----------------------------------|------------------|---------|-------------------------|----------------|-----------|------------------|
| 1 | Codecamp | x | x | x | | | | | |
| 2 | NDR | x | x | x | | | | | |
| 3 | Strogbytes | x | x | x | | | | | x |
| 4 | Civic Heroes | x | | | | x | | x | |
| 5 | ThinkOut | | x | | | | | | |
| 6 | Adservio | x | | x | | | | | x |
| 7 | Urbica | x | | | x | | | x | x |
| 8 | AI Recommender | x | x | x | | | | | x |
| 9 | Centru | x | | | | x | | | x |
| 10 | Informal School | | | | | | | | |
| 11 | Fab Lab | x | | | | | | | |
| 12 | PIN magazine & awards | | | | | | | | x |

1. Codecamp – IT community

| EXAMPLE | |
|------------------------------------|---|
| Name of the organisation | Codecamp Romania |
| Name of your city | Iași |
| Country | Romania |
| Title of your good practice | Codecamp – Your IT community & conference |
| Dimension | <p>Please select which of the 8 dimensions your good practice addresses:</p> <ul style="list-style-type: none"> • Infrastructure • Open Data • Digital skills and education • Digital competences of firms • Community • Finance • Support service • Governance and leadership |
| Short description | Codecamp is one of the most important IT communities in Romania. |

| EXAMPLE | |
|--------------|---|
| | <p>Born in Iași in 2008 with a strong desire for better communication among IT professionals, Codecamp was encouraged and sustained since its early beginnings by companies and other communities. The continuous efforts of the community helped it grow and it is now a series of 10+ large conferences per year, hackathons, open days, masterclasses and others all over Romania and The Republic of Moldavia.</p> |
| Why? | <p>Continuous education and career development, information and experience exchange, and business networking represent for the people in the IT industry preconditions to survive.</p> <p>Digital skills and services became the new electricity for all other industries, the world runs on technology.</p> <p>Codecamp creates the context where all this demand meets its supply and resources, where people upskill in technology, and all involved parties get the chance to connect and collaboratively craft our common future.</p> |
| What? | <p>Conferences What we mainly do is gather people together for learning and sharing professional experiences, fostering innovation and shaping the future together. Codecamp targets and brings together people from all the IT disciplines and who reached all possible career levels; from bright and enthusiastic students and juniors to the more experienced, wise and grey-hair senior and expert participants. The talks and workshops provided by our international and local speakers represent a massive source of knowledge and inspiration for the audience. Interested in Java, .NET, PHP, JavaScript, Ruby, Mobile, Cloud, Agile development, Software Architecture, Business Analysis, Management, Product Development, IT enabled entrepreneurship?</p> <p>Masterclasses Masterclasses are high-end learning events organised with top trainers and specialists coming from all over the world. The training/workshop usually lasts for no more than one or two days and addresses a relatively small number of people, so that everyone in the room gets full attention. Hands-on, practical approaches are favoured during the masterclasses, so that the attendees can apply them in their day to day work immediately afterwards.</p> <p>Hackathons Hackathons stand for innovation and quick problem solving. 24 to 48 hours of intense work in cross-disciplinary groups of usually 5 to 10 talented professionals does the magic. One just raises a topic and dozens of ideas are generated, curated and then some of them get actually implemented as a Minimum Viable Product, basis for a real production-ready solution. The topic to be hacked can be anything: a “crazy” idea to be explored, a concrete need from industry domains (healthcare, public transportation, automotive, fin-tech etc), groups of people, areas on the globe – it really doesn’t matter as long as the people who engage have enough determination, talent and knowledge in the team.</p> <p>Open Days Companies and other organisations really love getting in touch with the community of professionals. Online presence and communication are good, but in- person, face to face beats that. During the Open Days, companies open their doors and invite everyone to see how a normal day looks like in that organisation. Moreover, special events</p> |

| EXAMPLE | |
|----------------|---|
| | such as workshops/talks are organised with in-house or external/community speakers, which represent a really good learning opportunity for everyone. |
| Results | <p>12 years of intense activity, 45+ large conferences in the 10 cities of Romania, among which Iași is a flagship</p> <p>10+ conferences yearly</p> <p>2,000+ attendees per large events (e.g. Iași), 16,000+ attendees yearly</p> <p>90+ tracks & 500+ talks & workshops yearly</p> <p>200+ partners yearly</p> <p>35,000+ email contacts, 10,000+ people on Facebook, 800+ people on Twitter, 600+ people on LinkedIn</p> <p>In 2018: 500,000 reaches on Facebook, 200,000 website visits, 95,000 impressions on Twitter, 90,000 impressions on LinkedIn</p> <p>Plenty of people upskilled, companies found talent, communities grew with us, collaborations started, start-ups born. Millions smiles thrown in the world.</p> |
| Link | https://codecamp.ro/ |

2. NDR – The Artificial Intelligence conference of the CEE

| EXAMPLE | |
|------------------------------------|--|
| Name of the organisation | Strongbytes |
| Name of your city | Iași |
| Country | Romania |
| Title of your good practice | NDR – The Artificial Intelligence conference of the CEE |
| Dimension | <p>Please select which of the 8 dimensions your good practice addresses:</p> <ul style="list-style-type: none"> • Infrastructure • Open Data • Digital skills and education • Digital competences of firms • Community • Finance • Support service • Governance and leadership |
| Short description | NDR is one of the most important Artificial Intelligence communities and conferences in Romania. |
| Why? | <p>Artificial Intelligence is one of the technology fields that are already changing (and will continue to do that in an accelerated pace) the way we live and operate as individuals, businesses and societies.</p> <p>The need for a) every individual to have basic awareness, b) professionals to become experts, c) business and public institutions understand and invest when it comes to Artificial Intelligence represent a must for the time being and many years to come in order to achieve societal progress and economic business wealth, the need for proper education in this respect is mandatory.</p> |
| What? | <p>Artificial Intelligence conference organised in Iași in 2018 with 500 participants - IT professionals, business owners, academia, students.</p> <p>The conference will continue in 2019 and the years to come with the aim to massively contribute to building in the region an AI capability recognized internationally. This has obviously a huge potential a) to generate economic growth for the local businesses, b) foster innovation which will eventually lead to more local Intellectual Property, products and start-ups / entrepreneurial initiatives, c) attract foreign investment into local services and products, d) create a solid foundation for a more intelligent city.</p> |
| Results | <p>15+ talks / workshops</p> <p>500+ participants</p> <p>Solid foundation for creating a solid local Artificial Intelligence capability</p> |
| Link | https://ndrconf.ai/ |

3. Strongbytes: AI-powered products for business

| EXAMPLE | |
|------------------------------------|---|
| Name of the organisation | Strongbytes |
| Name of your city | Iași |
| Country | Romania |
| Title of your good practice | Strongbytes: Building AI-powered products |
| Dimension | <p>Please select which of the 8 dimensions your good practice addresses:</p> <ul style="list-style-type: none"> • Infrastructure • Open Data • Digital skills and education • Digital competences of firms • Community • Finance • Support service • Governance and leadership |
| Short description | Strongbytes is a technology company delivering intelligent products that make a huge impact on our customers' business, with the help of Artificial Intelligence. |
| Why? | <p>Artificial intelligence (AI) is marching its way into every domain of life and business. Driven by machine learning technologies and expert systems, AI revolutionises the approach to transforming unstructured data into valuable insights or actions.</p> <p>The constant demand coming from businesses and public institutions with solutions which involved data and intelligent interpretation of it as a solid basis for a) making the right decision in due time, b) cutting operation costs and eliminate inefficiencies, and c) creating new products for the right clients and selling more, proved to be a business case for us and represented the trigger to strategically invest and specialize in the Artificial Intelligence field and create the right capability to serve the market.</p> |
| What? | <p>We provide solution delivery services around Artificial Intelligence/Machine Learning capabilities. We help customers define the right Machine Learning use case for their business, building and training predictive models. One of our core strengths is also making these models operational, by creating scalable, secure and performant products around them. Having built such products, for clients ranging from start-ups to Fortune 500 companies, our expertise ensures your idea will get the right kind of treatment in our hands.</p> <p>The value we bring:</p> <ul style="list-style-type: none"> • Building AI Capabilities: Help you define the right machine learning use case for your business, analyse data and pick appropriate algorithms, build and train predictive models. • End-to-End Solution Delivery: Transform a predictive model into a live system or application. We call this "making it real". We create tailored-made products around ML models, modernise existing frontend or backend solutions, augmenting them with AI, or integrate new AI capabilities in enterprise applications that you already use. |

| EXAMPLE | |
|----------------|---|
| Results | <p>Created an AI capability which is constantly growing, aiming to be one of the leading of its kind in the CEE</p> <p>Served and continuing to serve national and international clients from various industries answer tough questions about their business and make proper decisions</p> <p>Acquiring domain knowledge from industries we work with and planning to incorporate it into a product/intellectual property/software as a service that can be scaled globally</p> |
| Link | <p>https://strongbytes.ai/</p> |

4. Civic Heroes – skills support for the community

| EXAMPLE | |
|------------------------------------|---|
| Name of the organisation | Civic Heroes |
| Name of your city | Iași |
| Country | Romania |
| Title of your good practice | Be a hero for your city - Civic Heroes |
| Dimension | <p>Please select which of the 8 dimensions your good practice addresses:</p> <ul style="list-style-type: none"> • Infrastructure • Open Data • Digital skills and education • Digital competencies of firms • Community • Finance • Support service • Governance and leadership |
| Short description | <p>Civic Heroes matches professionals who want to volunteer their skills with non-profit and social enterprises that need their help. They match volunteers and organisations based on a variety of characteristics including skills, cause interests, and time availability.</p> <p>Civic Heroes helps organisations identify their needs as short-term, discrete, and individual-based projects. Their projects are structured in this way to make it easy for professionals to find time to volunteer in the midst of their busy daily lives. Their service is free for all non-profit, social enterprises and professionals willing to donate their time.</p> |
| Why? | <p>Civic Heroes mission is to provide talented individuals with meaningful pro bono experiences in order to build capacity for social good organisations. Civic Heroes vision is to create a more efficient and effective social good sector, and a world where it is commonplace to serve for the greater good. They believe that all social good organisations should have access to top talent, that all people should have the opportunity to use their talents for good, and that people should have the opportunity to be transformed by a positive volunteer experience. They foster an environment rich in reciprocity and incentivize measurable actions over good intentions.</p> |
| What? | <p>Online Platform</p> <p>Civic Heroes is an online platform that connects professionals that want to volunteer their skills with non-profits that need the help.</p> <p>The mission is to provide talented individuals with meaningful pro bono experiences in order to build capacity for social good organisations.</p> |

| EXAMPLE | |
|----------------|--|
| | Hackathons We bring groups of professionals to work at major projects from the community. |
| Results | 2 hackathons in 2018 - with 150+ volunteers and 8 NGOs 200+ professional volunteers in the Civic Heroes Community 10 community projects with results |
| Link | http://civicheroes.ro |

5. ThinkOut – cashflow management system (start-up from Iași)

| EXAMPLE | |
|------------------------------------|--|
| Name of the organisation | ThinkOut |
| Name of your city | Iași |
| Country | Romania |
| Title of your good practice | ThinkOut – Your cashflow manager (start-up from Iași) |
| Dimension | <p>Please select which of the 8 dimensions your good practice addresses:</p> <ul style="list-style-type: none"> • Infrastructure • Open Data • Digital skills and education • Digital competences of firms • Community • Finance • Support service • Governance and leadership |
| Short description | ThinkOut is a dedicated cash flow management platform for small and medium sized companies, which provides a real-time overview of their current financial performance and a better understanding of the future, based on the transaction history from their bank accounts. |
| Why? | Due to the fact that SME owners or managers have to fulfil many different roles simultaneously, their companies are often run based on intuition. A thorough business analysis and forecast is out of hand, especially due to the effort needed and the lack of easy-to-use apps. As a consequence, cash flow problems are listed among top problems that entrepreneurs face as SMEs grow very slow or not at all, focusing mostly on survival. |
| What? | ThinkOut provides a fundamental company diagnose in an easy and fast manner, based on reliable, real-time data. Thus, in a matter of minutes, users are able to have a clear status regarding the current liquidity of the company and a set of forecasted money movements for future possible situations. As a result, the business analysis turns into a habit, helping to diminish the financial blockages and supporting a sustainable growth. |
| Results | All business owners have a need of understanding where the money goes and how they can provide more cash when they need it. ThinkOut is an anchor for all the entrepreneurs who feel like they need to be more informed when it comes to their financials, providing useful information regarding cash flow management and helping them to make better decisions for their businesses. |
| Link | https://thinkout.io |

6. Adservio – educational management platform

| EXAMPLE | |
|------------------------------------|---|
| Name of the organisation | Adservio |
| Name of your city | Iași |
| Country | Romania |
| Title of your good practice | Adservio, an educational management platform |
| Dimension | Please select which of the 8 dimensions your good practice addresses: Digital skills and education Community Support service |
| Short description | Adservio was founded in 2008 in Iași, being the first to develop an educational management platform in Romania. Adservio is currently a market leader nationwide, being used by more than 200,000 parents, students, teachers, executives, tutors, secretaries and representatives of the School Inspectorates in 23 counties. After 8 years of national activity, the application has also been used in the Republic of Moldova. |
| Why? | Adservio started from the idea of innovating education, a revolutionary idea for 2008, born in Iași. The platform improves every year and helps schools transform into Smart Schools with the help of technology. |
| What? | <p>The starting point for using the platform was represented by Vasile Alecsandri Theoretical High School, the school where the first implementation took place. Since then, they have exceeded 200 units of education and we have connected thousands of parents left abroad with the education of their children.</p> <p>Benefits for teachers</p> <ul style="list-style-type: none"> Rapid insertion of marks and absences; Automated calculation of media; Evidence of school and extra-curricular activities; Automatically motivating absences by introducing medical exemptions and certificates; Sign-posting pupils with problems of incompetence, number of insufficient or unmatched grades; Generate and submit reports to the management of the unit. <p>Benefits for parents and students</p> <ul style="list-style-type: none"> Direct, secure and individual communication Access to themes and projects Tests of self-knowledge Probability of listening to each subject |

| EXAMPLE | |
|----------------|--|
| | <p>Viewing activity over time</p> <p>The online library with over 200 free books</p> <p>Albums and class photo album</p> <p>Distributing documents directly from your account</p> <p>Statistics and rankings</p> <p>News and information from the educational environment</p> <p>Access the Out-of-School section</p> <p>User manual</p> <p>Access to the Conduct section</p> |
| Results | <p>All parties involved become more accountable for the teaching process</p> <p>The application facilitates very good communication between teachers, pupils and parents.</p> <p>The application prevents unpleasant situations through transparency and real-time communication.</p> <p>Parents, teachers and pupils are more involved in the education process.</p> <p>Some schools have registered up to 63% fewer absences after one year of use.</p> <p>The average per unit increased by one point.</p> <p>Improved results on national testing.</p> |
| Link | <p>https://www.adservio.ro/</p> |

7. Urbica: landlord management services

| EXAMPLE | |
|------------------------------------|---|
| Name of the organisation | Urbica |
| Name of your city | Iași |
| Country | Romania |
| Title of your good practice | Urbica - digital management and administration of communities |
| Dimension | <p>Please select which of the 8 dimensions your good practice addresses:</p> <ul style="list-style-type: none"> • Open Data • Community • Finance • Support service |
| Short description | <p>The URBICA concept has emerged as a natural solution to the difficulties generated by managing associations of landlords. Thus, from its establishment to the present, the number of landlord associations managed by Urbica has increased steadily for a moment from the basic principle: improving living together.</p> |
| Why? | <p>Management services should evolve with the demands of the tenants and they want more transparency, fairness and quick access to information. We benefit from the most advanced management software, with homeowners having access to a full set of reports on consumption, funds, balance, and more in our presence points as well as on the Internet or via email. At the same time, we find effective solutions for reducing water gaps and we pay special attention to the arrangement and maintenance of green areas around buildings.</p> |
| What? | <p>Digital communications have proven to be a great service because it saves a lot of time. Only declaring internet consumption saves up to 90% of the time. Members of the association can access all digital situations, declare monthly consumption, pay with the card on the internet, see activities in their association, benefit from a smart notification system, and can submit requests directly from Internet. Landlords can declare on the Internet the monthly number of people, see the quarterly reports and other specific reports.</p> |
| Results | <p>160 happy associations, 290 neat stairs and 11,500 satisfied residents are our results so far that prove the quality of the services offered.</p> |
| Link | <p>https://www.urbica.ro/despre-noi/</p> |

8. Artificial Intelligence-based career recommender system

| EXAMPLE | |
|------------------------------------|--|
| Name of the organisation | Strongbytes, Codecamp |
| Name of your city | Iași |
| Country | Romania |
| Title of your good practice | Artificial Intelligence based career recommender system for Codecamp, one of the largest IT communities |
| Dimension | <p>Please select which of the 8 dimensions your good practice addresses:</p> <ul style="list-style-type: none"> • Infrastructure • Open Data • Digital skills and education • Digital competences of firms • Community • Finance • Support service • Governance and leadership |
| Short description | Codecamp, the biggest technology conference in Romania uses machine learning to display the “right” job ads to visitors. |
| Why? | <p>One of the challenges of conferences, especially of large, distributed ones, is to keep both their visitors and sponsors happy, while at the same time increasing their revenue.</p> <p>Codecamp, the biggest technology conference and community in Romania, was interested in exploring alternative revenue streams, one such option being to monetize visitor traffic via a limited number of small, tasteful, job ads.</p> |
| What? | <p>Analysing Codecamp’s business needs, Strongbytes proposed an AI based recommender system that takes the information from each and every job ad and matches it with the information gathered about the visitors. Useful job ad data includes information about the company, such as size and domain of activity, but also about the technologies they require, the level of seniority, etc. Similarly, data pertaining to visitors includes the presentations they were interested in, the ones that they gave feedback on, the topics of said presentations, etc.</p> <p>Based on this information, Strongbytes designed a content-based recommender system able to learn the similarities present in the data and recommend to each visitor the job ads they are most likely to be interested in. We also designed the data augmentations needed to support building the recommender system, such as additional information collected for each job ad, but also the information collected for each visitor, with data often implied from their recorded behaviour on the Codecamp website.</p> |

| EXAMPLE | |
|----------------|---|
| Results | <p>Putting the recommender system in use means that the job ads present on the Codecamp website are matched to each visitor, and only the ones with the highest chance of a match are displayed on the home page. By only showing a limited number of ads that a visitor might be interested in, we decrease their potential “decision paralysis” in the face of many options, effectively increasing visitor-ad engagement.</p> <p>Increased revenue stream from the job ads product.</p> <p>Increased trust level in the collaboration with Codecamp partners and participants.</p> |
| Link | <p>https://codecamp.ro/, https://strongbytes.ai/</p> |

9. Centru - citizen engagement platform

| EXAMPLE | |
|------------------------------------|--|
| Name of the organisation | Centru |
| Name of your city | Iași |
| Country | Romania |
| Title of your good practice | Centru – The ultimate citizen engagement platform |
| Dimension | <p>Please select which of the 8 dimensions your good practice addresses:</p> <ul style="list-style-type: none"> • Infrastructure • Open Data • Digital skills and education • Digital competences of firms • Community • Finance • Support service • Governance and leadership |
| Short description | Enabling neighbourhoods for positive change. An integrated open city platform with services for better local communities. All local communication channels and smart city apps in one place. |
| Why? | <p>A social platform like no other – empowering people to lead the digital transformation of their cities, from bottom to top, from local communities to local agencies.</p> <p>Neighbourhood at its core The neighbourhood is the ‘change agent’ empowering the city progress.</p> <p>Work and live together An inclusive space for all stakeholders. Working and living better, together.</p> <p>Build, fast! Like, really fast. It should only take days to launch new services. Testing and iterating over multiple solutions with city residents has never been easier!</p> |
| What? | <p>Neighbourhood communication and collaboration People can connect with their neighbours in restricted, geo-fenced areas. They can access public or private conversation channels, and share messages, files and impressions.</p> <ul style="list-style-type: none"> • Access for neighbours only A secure environment where all neighbours are verified. • Organise in channels Channels can be set as public or private. • Notifications The easiest way to keep up with everything happening in the local community. <p>Services for better local communities A unique set of tools tailored to help local agencies to start the digital transformation of their city.</p> <ul style="list-style-type: none"> • Alerts |

| EXAMPLE | |
|----------------|--|
| | <p>Broadcast alerts using geo-targeted messages, sent by city hall or local agencies.</p> <ul style="list-style-type: none">• Reports & Suggestions Of course we haven't forgotten about the responsive layout. Full mobile support.• Open participation Build up trust in your community with idea and policy voting and debate. |
| Results | To be launched in the 2nd quarter of 2018 |
| Link | https://centru.co |

10. The Informal School of IT

| EXAMPLE | |
|------------------------------------|---|
| Name of the organisation | Educatie Informala SA |
| Name of your city | Iași |
| Country | Romania |
| Title of your good practice | The Informal School of IT <ul style="list-style-type: none"> • Time to learn something you are passionate about |
| Dimension | <ul style="list-style-type: none"> • Digital skills and education |
| Short description | The Informal School of IT is the largest platform in Romania that brings together industry leading professionals with talented people driven by a desire to develop their unique IT skills. |
| Why? | The pipeline of graduates from the formal education institutions has remained constant over time in spite of the increasing request from companies |
| What? | Our hands-on approach, combined with a permanently updated curricula and convenient timeframe proved to be a successful recipe for our alternative school |
| Results | In six major cities of Romania (Iași included), The Informal School of IT has a team of 100 mentors and in 5 years of activity more 3,000 people have done reconversion programs towards tech industry. |
| Link | https://informalschool.com/ |

11. Fab Lab Iași - digital fabrication laboratory & co-working

| EXAMPLE | |
|------------------------------------|--|
| Name of the organisation | Asociatia Fab Lab Iași (ONG) |
| Name of your city | Iași |
| Country | Romania |
| Title of your good practice | Fab Lab Iași - Digital Fabrication Laboratory |
| Dimension | <ul style="list-style-type: none"> Community |
| Short description | Fab Lab Iași is a coworking space with a surface of over 700 square meters near the Technical University of Iași |
| Why? | We believe that the entrepreneurial community need such an independent and flexible place in order to thrive, to communicate, to be informed, to work remotely for international clients |
| What? | Fab Lab Iași offers different scenarios for flexible use of the space (competition areas, co-working, makerspace, teaching rooms, spaces for video conferences and personal desks) |
| Results | In the 1st year from inauguration, more than 20,000 people have visited Fab Lab Iași : The Informal School of IT, meetups of the tech communities, programming and robotics courses for kids, hackathons |
| Link | www.fablabiași.ro |

12. PIN Magazine & Gala Awards

| EXAMPLE | |
|------------------------------------|---|
| Name of the organisation | Asociatia PIN (ONG) |
| Name of your city | Iași |
| Country | Romania |
| Title of your good practice | PIN Magazine & Gala Awards <ul style="list-style-type: none"> Smart media for a smart city |
| Dimension | <ul style="list-style-type: none"> Support service |
| Short description | Quarterly offline and online magazine for the regional IT & Outsourcing industry. Annually Gala Awards to celebrate people, initiatives and ITO companies |
| Why? | ITO industry needed a regional voice, a mass-media vehicle in order for all stakeholders to understand it better |
| What? | More the 100 contributors have written articles in the last 3 years. The 1.000 printed magazines per issue are read by managers, students, pupils, recruiters, real-estate developers. Also, the online issue and the FB page is very active. |
| Results | PIN magazine is publishing its 11th edition at the beginning of 2019, and in May 2019 we will organise the 4th edition of PIN Awards with focus on "Women in Technology" |
| Links | www.pinmagazine.ro www.pinawards.ro |

Appendix IV: Bibliography

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2. IAȘI Breviar Economic 2017 - Chamber of Commerce and Industry of IAȘI.
3. The Strategy for Sustainable Economic and Social Development of the Municipality of IAȘI - Horizon 2020.
4. Market Research Report (“ITC 2030 North-East Region”) published by ADI Euronest ICT Cluster.
5. Relevant articles from PINmagazine, the regional ITO industry magazine.
6. Air Quality Plan for IAȘI for 2018 – 2023.
7. Strategia pentru Cercetare și Inovare Regională prin Specializare Inteligentă RIS3 NORD-EST, rev 2016.
8. IAȘI - Cyber City Concept Note - February 2018.

Appendix V: Stakeholders consulted

| Name | Position / Organisation |
|--|---|
| Mihai Chirica | Mayor of IAȘI |
| Adrian Mironescu – Wiron | (SME) |
| Adrian Rotariu | AIESEC |
| Alex Donici | IT professional (SME) |
| Alexandra Stroea - Iulius Mall, Hypera | (Entrepreneur) |
| Alexandrina Dinga | CIVICA (NGO) co-founder |
| Andreea Toma | Sales Coordinator at Webmagnat (SME) |
| Adrian Iftene | Associate Professor, PhD, Dean of Faculty of Computer Science Iasi, AI.I.Cuza University (and Academic Rep for DCC) |
| Carmen Marinela Cumpat | Managing Director Major Trauma Recovery Hospital of IAȘI |
| Catalin Boghiu | PM for DCC and Head of Urban Transport Office in IASI Cityhall |
| Conf Dr. Corina Forascu | Informatics School, University AI. I. Cuza IAȘI |
| Cristi Graunte | Infinite Loop Studio |
| Cristian Bejereanu | Wedoo (SME) |
| Dan Nicolae | Strongbytes (SME) |

| Name | Position / Organisation |
|------------------------------|--|
| Dan Zaharia | Fab Lab IAȘI (and Business Rep for DCC) |
| Daniela Florea | Geo-Strategies CEO, DCC Coordinator Consultant |
| Delian Coroama | MD Webmagnat (SME) |
| Eugen Busoiu | IAȘI AI |
| Florin Cardasim Local Expert | Local Expert |
| Florin Constantin Serbescu | Director of Scientific Park Tehnopolis IAȘI |
| Gabriela Coman | Coordinator of the Business Incubator at Tehnopolis IAȘI and Enterprise Europe Network Project Manager |
| George Turcanasu | Ph.D. Associate Professor, Faculty of Geography |
| Laura Albu | CSMC (NGO) |
| Lidia Betoaea | North East Development Regional Agency - Entrepreneurship Programme |
| Maria Andreescu | Chief Financial Officer - IAȘI Townhall |
| Marius Danga | Public Procurement Expert |
| Mihail Birsan | Manager at Mbevent (SME) |
| Nicu Bagiu | Project Manager Software Automation & Business Solutions (SABS) (SME) |
| Ovidiu Mihaiuc | TBNR Accelerator |
| Paul Butnariu | President of IAȘI Chamber of Commerce and Industry |

| Name | Position / Organisation |
|----------------------------------|--|
| Prof. Carmen Losonczy | Director of Informatics Highschool |
| Prof.dr. Adina Mihaela Romanescu | Deputy Director Informatics Highschool |
| Sorin Gheorghiu | Director of Membership at IAȘI Chamber of Commerce and Industry |
| Lenuta Alboaie | Associate Professor PhD, Deputy Dean of Faculty of Computer Science, University Al.I. Cuza, Iasi |
| Vasile Moraru | Romerinde (SME) |
| Vlad Gliga | North East Development Regional Agency - Entrepreneurship Programme |
| Vlad Iliescu | Strong Bytes IASI - AI / Technology |

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